

**Identifying risk factors for postpartum depressive  
symptoms: the importance of social support, self-efficacy,  
and emotion regulation**

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## Contents

<b>Acknowledgements</b>	<b>1</b>
<b>List of Papers</b>	<b>2</b>
<b>Summary</b>	<b>3</b>
<b>Introduction</b>	<b>5</b>
Birth – a rite of passage	5
Postpartum rituals in a historical perspective	5
Defining postpartum depression	7
The subjective experience of postpartum depression	9
Postpartum depression across cultures	9
At risk for postpartum depression	11
Psychological theories relevant for postpartum depression	11
Social support	11
General self-efficacy	12
Emotion regulation strategies	14
<b>Aims of the study</b>	<b>15</b>
Paper I	16
Paper II	16
Paper III	16
<b>Materials and Methods</b>	<b>17</b>
Design	17
Samples	17
Measures in the Survey Questionnaire	17
Postpartum depressive symptoms: Edinburgh Postnatal Depression Scale	18
Generalized Self-Efficacy Scale	18
Breastfeeding Self-Efficacy Scale	19
Berlin Social Support Scales	19
The Cognitive Emotion Regulation Questionnaire	19
Interview- guide	20
Statistical Analyses	20
Paper I	20
Paper II	21
Paper III	21
Ethical Considerations	21
<b>Summary of Papers</b>	<b>22</b>

Paper I.....	22
Paper II.....	23
Paper III.....	23
<b>Discussion.....</b>	<b>24</b>
Discussion of the Main Findings.....	24
General self-efficacy, breastfeeding self-efficacy, and postpartum depression...	25
Social support.....	27
Cognitive emotion regulation strategies.....	29
Other risk factors.....	30
Personal approach and the use of cognitive emotion regulation strategies.....	30
Are cross-sectional studies underrated?.....	31
Methodological Considerations.....	31
Survey questionnaires.....	32
Web-based questionnaires in survey design: advantages and limitations...	32
External and internal validity.....	34
External and internal validity in a longitudinal survey study.....	34
Semi-structured interview.....	35
Advantages and limitations in qualitative research.....	35
Validity in qualitative research.....	36
Do the interviews and survey address the same phenomenon?.....	37
Narrow and broad definitions of validity.....	37
All aspects are not measured explicitly.....	37
Strengths and limitations.....	38
<b>Final Remarks.....</b>	<b>39</b>
Implications.....	39
<b>References.....</b>	<b>40</b>
<b>Papers I-III</b>	
<b>Appendix</b>	
I.    Survey questionnaire	
II.   Interview guide	

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## **List of Papers**

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3. Haga, S.M., Ulleberg, P., Slinning, K., Kraft, P., Steen T., & Staff, A. A longitudinal study of postpartum depression: Multilevel growth curve analyses of emotion regulation strategies, breastfeeding self-efficacy and social support. *Archives of Women's Mental Health*. (Submitted)

## Summary

As many as 10-15% of new mothers experience severe emotional distress frequently labelled *postpartum depression* (PPD) (Brockington, 2004; O'Hara & Swain, 1996). The consequences of postpartum depressive symptoms can be serious for the mother, her child and family. Indeed, women who suffer from PPD are less capable of carrying out maternal duties, which may influence the child's cognitive, and socioemotional development (Goodman, Brogan, Lynch & Shielding, 1993), as well as the infant's attachment style (Bonari, Bennett, Einarson, & Koren, 2004). Typically, studies emphasize risk factors for PPD that are hard to modify such as a personal history of previously experienced depression, family history of depression, negative life events, certain baby characteristics, and demographics such as parity (Munk-Olsen, Munk Laursen, Bøcker Pedersen, Mors, & Mortensen, 2006) and age (Beck, 2001; Glavin, Smith, & Sørsum, 2009; O'Hara & Swain, 1996).

In line with a more preventative framework, the overall aim of this thesis was to investigate the contribution of psychological<sup>1</sup> variables on postpartum depressive symptoms (as measured by the EPDS). We explored in a cross-sectional study how general self-efficacy, breastfeeding self-efficacy and various dimensions of social support predicted postpartum depressive symptoms. The relation between breastfeeding self-efficacy, emotion regulation strategies, various dimensions of social support and postpartum depressive symptoms were further explored in a longitudinal study. In addition, we were interested in a deeper understanding of how first-time mothers experienced the postpartum period and what they regarded as important psychological variables in relation to well-being and depressive symptoms. These questions were explored in a separate qualitative study of first-time mothers.

Results from the cross-sectional study illustrated how higher levels of general self-efficacy and breastfeeding self-efficacy correlated with lower postpartum depressive symptoms. In terms of social support, perceived available support was found to be inversely related to depressive symptoms postpartum. Findings from the longitudinal study suggested that mothers with high breastfeeding self-efficacy tended to have low scores on the EPDS at all three time points. Two of the four social support scales were significantly related to the rate of EPDS scores; perceived available support and need for support. High perceived available

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<sup>1</sup> Studies often refer to social support as a psychosocial variable. As we measure the postpartum women's perception of social support, we prefer to refer to social support as a psychological variable here in.

support was related to less symptoms of postpartum depression, while high need for support was related to higher depression scores. Cognitive emotion regulation strategies were related with EPDS total scores as expected from theory. That is, while rumination, blaming oneself, and catastrophizing were all significantly related to higher levels of depressive symptoms postpartum, positive reinterpretation and concentrating on planning predicted lower postpartum depression scores.

Interestingly, social support and managing breastfeeding stood out as important factors with regards to well-being and depressive symptoms in the qualitative interviews as well. In addition, we found that women varied in how they approached motherhood. These approaches, which we named (in line with how the mother themselves talked about it) ‘controlled’ and ‘relaxed’ influenced how the mothers had envisioned the postpartum period and their need for mastery. Type and specificity of expectations as well as a high need for mastery were related to subjective feelings of depressed mood and well-being.

In summary, our findings demonstrate the importance of psychological variables as risk factors of postpartum depressive symptoms



## **1. INTRODUCTION**

### **1.1 Birth – a rite of passage.**

The birth of a child marks the transition from one stage in a woman's life to another. This transition of becoming a mother is an example of a rite of passage; an important life-altering event that is accompanied by a set of rituals. The time following the birth of a child, referred to as the postpartum period, has across cultures historically been considered a vulnerable time for the woman (Mead & Newton, 1967). Psychoanalyst Daniel N. Stern has studied extensively what it means to become a mother. He uses the term *motherhood constellation* to describe a mental organization in which the child is most prominent (Stern, 1998). In accordance with Winnicott's (1965) term, the *primary maternal preoccupation*, the motherhood constellation may be defined as the primary caregiver's own biological readiness state (Stern, 1998). Stern (1998) argues that the motherhood constellation starts to emerge during pregnancy and it represents a new mind-set that shapes a woman's view of self. Put differently, it represents a new and unique way for the new mother to organize herself, in which her primary preoccupation becomes the well-being of her baby. New concerns are in focus; can she maintain the life and growth of her baby, can she assure the baby's psychological development, can she create a necessary support system, and finally, can she facilitate all these functions.

### **1.2 Postpartum rituals in a historical perspective**

According to the Bible, Virgin Mary was cleansed 40 days after the birth of Jesus Christ, and interestingly, the postpartum period has in Christianity, Jewdeism, and Islam been considered to last for 40 days (Eberhard-Gran, Nordhagen, Heiberg, Bergsjø, Eskild, 2003). Historically, a postpartum woman has been considered impure (Jimenez & Newton, 1979) as well as vulnerable during these 40 days (Mead & Newton, 1967). As such, she had to be isolated in order to protect the surroundings from her impurities, as well as to protect herself from the potentially harmful surroundings. The isolation in turn resulted in relief from her regular duties. Other cross-cultural commonalities in postpartum rituals have also been reported (Eberhard-Gran et al., 2003). The new mother was to have complete rest, and oftentimes she was to have another person present at all hours who could assist in taking care of the baby as well as other chores. In consequence, the focus was not only caring for the baby, but also caring for the new mother.

During the 19<sup>th</sup> century, mortality rates were high among women who gave birth (Kjærheim, 1987). It is thus natural to assume that several of the rituals existed in order to prevent mortality. However, since the 1950s, the birth of a baby was moved into the hospitals, and it was no longer considered a high-risk event. While it was common for the father to be directly involved in the birth in the old rural communities, the inclusion of the father became rare when deliveries were done in the hospital (Högberg, 1999). Although the resting time for a new mother was shorter than the 40 days during the 1950-60s, a new mother was still required to rest between 8-14 days after delivery. She was also to have assistance in the home, and she would see her baby every 4 hours when it was time for breastfeeding. Recently, there has been a clear tendency in industrialized countries to minimize the number of days spent resting in the hospital after delivery (Thompson, Fraser, Hewitt & Skipper, 1989). In fact, new mothers in Norway typically spend up to 3 days in the hospital following an uncomplicated birth (Haram, Gjengstø, & Brunstad, 1998). In a sense one could say that the postpartum period has yet again been transferred back into the home. The difference is that the unity that existed among women in the old, rural communities is no longer present. The support the new mother used to receive from the community during the first 40 days is replaced with one visit from a health nurse a week after returning from the hospital. What is more, concurrent with the reduction in public postpartum care efforts directed towards the mother there is a current trend to increase the focus on the newborn baby's needs and the importance of breastfeeding (Eberhard-Gran, Garthus-Niegel, Garthus-Niegel, & Eskild, 2010). To many new mothers this may be perceived as increased pressure.

In order to deal effectively with the concerns of being a new mother, Winnicott (1965) argues that a mother needs a *holding environment*. A holding environment is a context in which the new mother can feel validated, encouraged and supported. The importance of connecting with other mothers has also been pointed out by Stern (1998) who describes how new mothers in general show an increased interest for other mothers and seek their company. Their primary goal is not to receive practical support, but to be part of a group where the members have common experiences and share the same interests and needs. Once in a holding environment the mother can feel secure enough to explore and develop her maternal behavior. Stern (1998) argues that although our western culture values the maternal role, the family, society, and culture do not provide the new mother with the experience, training, or adequate support for her to manage her maternal role easily or well.

Only a few studies have looked at the implications of different postpartum rituals in western societies. One such study compared Mexican women in the United States who followed the rules proscribed by *la cuarentena* versus those who did not (Gaviria, Stern, Schensul, 1982). *La cuarentena* comes from *cuarenta*, which means 40 in Spanish, and it suggests that new mothers should be in quarentene and rest the first 40 days after birth. Importantly, the study showed that the women who followed the traditions of *la cuarentena* showed fewer symptoms of postpartum depression (PPD). Similarly, Lee, Chan, Sahota, Yip, Tsui, & Chung (2004) found that women in Hong Kong who followed the traditional *peiyue*, or ‘doing the month’, demonstrated lower risk of PPD. The *peiyue* is the label used for the 40 days after delivery when a female relative assumes responsibility of all household chores. As aforementioned, the traditional rituals tied to the birth and the 40 days postpartum were likely to have evolved in order to decrease mortality rate among childbearing women, however, it may be the case that a secondary benefit could have been enhanced mental well-being among new mothers. The rituals allowed a new mother to rest, and she was never alone. She was in a holding environment.

### **1.3 Defining postpartum depression**

Recent studies demonstrate that the postpartum period represents a vulnerable time for a new mother. Indeed, postpartum women have been found to be at increased risk for mental disorders (Munk-Olsen et al., 2006; Robertson, Grace, Wallington & Stewart, 2004). Postpartum depressive disorders vary in severity; ranging from the mildest kind seen in postpartum blues to moderate or major depression, to the most severe cases known as postpartum psychosis (Brockington, 2004). Whilst only 0.2 percent of new mothers experience postpartum psychosis, postpartum blues affect as many as 50-80% of postpartum women and it is thus considered to be a fairly ‘normal’ phenomenon. Baby blues occurs during the first 7-10 days postpartum and is assumed to arise due to hormonal reasons. It usually wanes without treatment during the course of a few days, especially with the support of family and friends and with the reassurance of health personnel that this reaction is quite normal (Bloch, Rotenberg, Koren, & Klein, 2005; Robertson et al., 2004). If the baby blues does not wane, it could be the start of PPD (Cox, Connor, & Kendell, 1982).

PPD falls under the category of major depressive disorder, with standards for diagnosis found

in the American Psychiatric Association's (APA, 2000) *Diagnostic and Statistical Manual of Mental Disorder*, fourth edition, text revision (DSM-IV-TR), as well as in the *European Classifications of Mental and Behavioural Disorder* (ICD-10, WHO, 1992). According to the diagnostic manuals (APA, 2000; WHO, 1992), description, symptoms, course and outcomes of PPD are similar to major depressive disorder (MDD). The only difference is the time of its occurrence. The term postpartum comes from the Latin words *post* and *partus*, which respectively mean after and birth (Eberhard-Gran, 2009). In other words, the depression strikes in a woman's life when she is expected to be as happy as can be, which obviously makes the experience of the depression particularly arduous. In order to fulfill a diagnosis of PPD one must experience a period of at least 2 weeks of depressed mood or loss of interest in almost all activities, as well as experiencing at least four of the following symptoms: change in appetite and weight, sleep, and psychomotor activity; decreased energy; feelings of worthlessness or guilt; difficulty thinking, concentrating, or making decisions; and recurrent thoughts of death or suicidal ideation, plans, or attempts (APA, 2000).

The most common screening-tool for PPD is the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987), which assesses depressive symptoms during the last 7 days (Boyd, Le, & Somberg, 2005). The most common symptoms of PPD are tearfulness, feelings of hopelessness, inadequacy, guilt, inability to cope with and feel joy over the new baby, agitation and anxiety, loss of appetite, poor concentration and memory, sleep disturbances, fatigue, social isolation, and suicidal ideation (Robertson et al., 2004). PPD as described in the diagnostic manuals (APA, 2000; WHO, 1992) include several symptoms that are often an inherent part of the postpartum period, such as loss of sleep, weight and energy. Thus, the EPDS was developed to assess PPD more specifically as general measures of depression have been found to be inadequate. The unique quality of the EPDS compared to other measures of depression is that it does not assess depression based on symptoms that are common to largely all new mothers, such as loss of energy, feeling tired, changes in appetite and sexual drive. Mothers with EPDS scores above a defined cut point are often referred to as having PPD. Cox et al. (1987) originally recommended a cut-off score of  $\geq 12$  as an indication of depression, however, a cut-off score of  $\geq 10$  is also typically used for community-based screening. The EPDS has been found to have good psychometric properties (Berle, Aarre, Mykletun, Dahl & Holsten, 2003; Eberhard-Gran, Eskild, Tambs, Schei, & Opjordsmoen, 2001). Nevertheless, research suggests that a substantial proportion of new

mothers experience depressive symptoms postpartum according to the EPDS without fulfilling the diagnostic criteria outlined in the DSM-IV and ICD-10 (Lee, 1997). While accurate clinical diagnosis is important, depressive symptomology postpartum varies along a continuum, and a strict adherence to diagnostic criteria may underestimate the true magnitude of PPD (Lee, Yip, Chiu, & Chung, 2000). Moreover, it fails to acknowledge the suffering associated with subclinical depression, which is particularly worrisome as subclinical depressive symptoms also constitute a heavy toll on women and the health and well-being of their children (Goodman et al., 1993). Indeed, women who suffer from postpartum depressive symptoms are less capable of carrying out maternal duties, such as engaging in important developmental activities with the baby, like playing and talking, which may influence the child's cognitive, and socioemotional development (Goodman, et al., 1993), as well as the infant's attachment style (Bonari et al., 2004). In addition, PPD can be quite exigent for the whole family (Horowitz & Goodman, 2005). Previous studies have found that partners of women with PPD are at increased risk of developing psychiatric disorders (Lovestone & Kumar, 1993).

### **1.3.1 The subjective experience of postpartum depression**

It is also important to note that while diagnostic criteria of PPD are useful, they tell us little about what a new mother goes through when she feels depressed or sad after having a baby. Leahy-Warren & McCarthy (2007) reviewed qualitative studies that had examined mothers' thoughts and feelings with regards to PPD, and found that, consistent with diagnostic criteria, feelings of loneliness, anxiety, hopelessness, confusion, guilt, low sense of concentration, tiredness, and a loss of control and previous identity signified the women who found the postpartum period to be emotionally difficult. What is not listed in any diagnostic manual, however, but was nevertheless reported as an especially taxing aspect of PPD was the stigma associated with the depression. Furthermore, the stigma and lack of knowledge regarding PPD made it harder for the women to seek help (Leahy-Warren & McCarthy, 2007).

### **1.4 Postpartum depression across cultures**

The EPDS has been the screening tool of choice over the last two decades. The original scale by Cox et al. (1987) has been translated into more than 25 different languages, most of which have been validated (Cox & Holden, 2003). Typically, the prevalence rate of PPD have been

reported to be 10-15%, however, it is important to note that few studies have been population-based and the studies most frequently cited have been done in western countries biased toward married, middle class women (Beck, 2001; Bloch et al, 2005; Brockington, 2004; O'Hara & Swain, 1996). In order to talk about a universal phenomenon, a disorder must have the same symptomatology, diagnosis, treatment and prognosis worldwide. Over the last decade there has been an increase in cross-cultural studies of PPD (Chan & Levy, 2004; Ghubash & Abou-Saleh, 1997; Patel, Rodrigues, & DeSouza, 2002), and although these studies have found that the phenomenon was labelled somewhat differently in various cultures, PPD seems to be a universal experience to quite a few new mothers with newborns. Halbreich & Karkun (2006), however, found great variation in prevalence rates across cultures. 143 studies were included in their extensive review, and prevalence ranged from 0-60%. The variation in prevalence depended in part on the cut-off score (9-13) on the EPDS, as well as when depressive symptoms were measured postpartum. Importantly, however, Halbreich & Karkun (2006) found significant diversity in prevalence even when the time period was standardized to 6 weeks, suggesting one may ought to question the representativeness of the widely cited prevalence rate of 10-15%.

It has been suggested that although the EPDS adequately detects the dimension of depression for which it was developed, there may be a need for a more culturally sensitive tool to measure PPD (Halbreich & Karkun, 2006; Lee, Yip, Chiu, Leung & Chung, 2001). A recent study (Small, Judith, Yelland, & Brown, 2007) sought to explore how culturally diverse samples performed on the EPDS, and found no major differences in the way the samples responded to the scale. Dankner, Goldberg, Fisch & Crum (2000) suggest that environmental differences, as well as different cultural norms may be accountable for some of the variation in prevalence rates of PPD. One elaborate study, Transcultural Study of Postnatal Depression (TCS-PND) aimed to compare prevalence, predictors and consequences of PPD across several cultures (11 countries) with the ultimate aim of examining whether there is a universal concept of PPD (Asten, Marks, & Oates, 2004). The study included both Western and non-Western cultures. Interestingly, the same symptoms were either recognized as PPD or simply described as a matter of fact, depending on the cultural background. Thus, the symptoms postpartum women experienced did not differ markedly, only the labelling of them. Suggesting PPD to be a universal phenomenon.

## **1.5 At risk for postpartum depression**

With the increased awareness of the universality of PPD and the recognition of its implications for the mother, child, and partner, numerous studies have attempted to ascertain whether there are some specific factors that put women at elevated risk for PPD. Meta-analyses (Beck, 2001; O'Hara & Swain, 1996) and often cited studies (Bloch et al., 2005; Brockington, 2004) emphasize certain factors that are suggested to comprise potential risk factors, including a personal history of depression, family history of depression, negative life events, partner conflicts or low relationship satisfaction, low levels of social support and certain baby characteristics. Other risk factors that have been repeatedly identified are low self-esteem, and being a single or a teenage mother (Beck, 2001). First-time mothers have also been suggested to be extra vulnerable for PPD (Munk et al., 2006). Importantly, the risk of developing PPD increases with the number of risk factors present.

## **1.6 Psychological theories relevant for postpartum depression**

### **1.6.1 Social support**

In their study of PPD, Asten et al. (2004) found that the importance of marital and family relationships was consistently emphasized across both Western and non-Western cultures. Specifically, they noted that a lack of emotional and practical support were related to unhappiness or PPD. Indeed, the participants' own recommendation for treating PPD was better support from partner and family. These findings along with the historically important postpartum rituals described above, illustrate how social support is fundamental to well-being postpartum; both historically and cross-culturally. The presence of social support has been found to buffer against depression, in part by influencing how one copes with stress (Schwarzer & Knoll, 2007).

While numerous studies have examined the link between social support and PPD, they typically refer to social support as a unidimensional risk factor. Social support, however, is a multifaceted concept and the unique contributions of particular aspects of social support with regards to PPD are unclear. Hence, a purpose of the present study was to assess how various dimensions of social support relate to PPD. In addition to the common distinction made between emotional, instrumental and informational social support (Collins, Dunkel-Schetter,

Lobel & Scrimshaw, 1993; Schaefer, Coyne & Lazarus, 1981), a distinction can also be made between perceived available support and actual support received. While perceived available support says something about the expectation of what will happen in the future, actual received support is a retrospective evaluation of support already received (Schwarzer & Knoll, 2007; Schwarzer & Leppin, 1991). Perceived available support is considered to be an entirely cognitive process, which in turn makes it more stable, universal, and trait-like than actual received support which is more of an observation of received support (Dunkel-Schetter & Bennett, 1990; Lakey & Drew, 1997). These two constructs have been found to correlate poorly, suggesting perhaps that one has a tendency to under- or overestimate the availability of one's social resources (Collins et al., 1993; Schwarzer & Knoll, 2007).

Schwarzer & Knoll (2007) suggest social support to be related to well-being and health outcomes through self-efficacy. Specifically, they posit social support and self-efficacy to influence well-being in two different ways; through the enabling and cultivating hypotheses. The enabling hypothesis suggests that self-efficacy mediates the relationship between social support and any given outcome. In other words, social support facilitates self-efficacy, which in turn improves how one deals with challenges and situations. The cultivating hypothesis suggests that it might just as well be social support that mediates the relationship between self-efficacy and various outcomes, such as depression. A person with a high sense of self-efficacy is more likely to initiate social activities, thereby facilitating social contact, which may buffer against depression. Several studies support both the enabling (Haslam, Pakenham, & Smith, 2006; Saltzman & Holahan, 2002) and the cultivating hypotheses (Schwarzer & Gutiérrez-Doña, 2005), and these hypotheses are not considered mutually exclusive (Schwarzer & Knoll, 2007). Importantly, both hypotheses highlight the role self-efficacy plays alongside social support in influencing a person's level of well-being.

### **1.6.2 General self-efficacy**

Self-efficacy refers to a person's belief that he or she possesses the abilities to achieve a given goal (Bandura, 1977, 1992). According to Bandura (1977, 1992), the level of self-efficacy will determine whether or not a person initiates coping behavior, how much effort the person puts into achieving the goal, and how persistent one will be when faced with adversity.



Bandura emphasizes how self-efficacy is context specific, and how one in turn may have various degrees of self-efficacy depending on the situation (Bandura, 1977, 1992).

Self-efficacy has been found to be inversely related to depression (Bandura, 1977). A reduced sense of self-efficacy is assumed to function as both a cause and effect of depression, presumably because self-efficacy influences how one feels, but how one feels does also influence one's sense of self-efficacy. Perceptions of self-efficacy are based on four sources of information: performance accomplishments, emotional arousal, vicarious experience, and verbal persuasion. The latter two involve social interaction. Vicarious experience involves learning by means of observing effective behaviour modelled by others similar to oneself (for instance, observing how another mother successfully soothes her child), and verbal persuasion may involve informational advice, or a situation where another makes salient a person's previous mastery experiences, which in turn may enhance that person's feeling of self-efficacy (Bandura, 1977). In other words, social support appears to be central to a person's sense of self-efficacy, and in turn his or her level of well-being. Interestingly, theories of social support suggest social support to be related to depression directly, but also indirectly via general self-efficacy (Cutrona & Troutman, 1986; Haslam et al., 2006; Saltzman & Holahan, 2002; Schwarzer & Knoll, 2007). According to Fiori, McIlvane, Brown & Antonucci (2006, p. 228), the relationship can be described as a process "by which the beliefs of a supportive other about an individual are transferred to that individual, thereby influencing the individual's self-efficacy."

As self-efficacy has been established as a predictor of depression, some studies have accordingly examined the effect of general self-efficacy (Howell, Mora, & Leventhal, 2006) and maternal self-efficacy on PPD (Coleman & Karraker, 1997; Cutrona & Troutman, 1986; Haslam et al, 2006). In general, findings are comparable to those of depression, namely that higher levels of general and maternal self-efficacy are associated with lower levels of depressive symptoms postpartum.

Bandura (1997) argues that in order for self-efficacy beliefs to have substantial predictive power they must be measured with a level of specificity consistent with the critical task at hand. In effect, the measure of self-efficacy needs to be relevant in order for it to have an

influence. In terms of the postpartum period, breastfeeding represents a concrete skill many new mothers attempt to master after birth. In Norway, where the present studies took place, breastfeeding is highly valued, and highly recommended. In fact, 99% of Norwegian mothers initiate breastfeeding after birth (Haggkvist, Brantsaeter, Grjibovski, Helsing, Meltzer, & Haugen, 2010) and 80% breastfeed (totally or partly) their babies at 6 months postpartum (Statistics Norway, 2003). In consequence, breastfeeding is *the* number one skill postpartum women wish to master. The term *breastfeeding self-efficacy* refers to a mother's belief that she possesses the abilities to breastfeed her infant (Dennis & Faux, 1999). At present, there are to our knowledge, only two studies (Dai & Dennis, 2003; Dennis, 2003) that have examined how self-efficacy pertaining to breastfeeding relates to PPD. Their primary aim, however, was to assess the validity of the breastfeeding self-efficacy scale (BSES), rather than discuss the relationship between these variables. As breastfeeding is such an important task for a new mother to master during the first months postpartum, it may be the case that women who do not feel efficacious when it comes to breastfeeding experience feelings of failure and lowered mood, and may thus be at increased risk for PPD.

### **1.6.3 Emotion regulation strategies**

The ways in which we regulate our emotions and deal with daily obstacles affect both our physical and mental health (Gross, Richards, & John, 2006). Emotion regulation refers to individuals' attempt to "influence which emotions they have, when they have them, and how these emotions are experienced and expressed" (Gross et al., 2006, p. 3). Recent studies have found strong relationships between a person's tendency to use certain strategies and various emotional problems such as depression (Garnefski & Kraaij, 2006; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), generalized anxiety disorder (Mennin, Holoway, Fresco, Moore, & Heimberg, 2007), and eating disorders (Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Nine conceptually different cognitive emotion regulation strategies have been suggested: self-blame, other-blame, rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and planning (Garnefski Kraaij & Spinhoven, 2001). In general, previous studies suggest that while cognitive strategies such as rumination, self-blame and catastrophizing are positively associated with psychopathology (Aldao & Nolen-Hoeksema, 2010; Garnefski, Kraaij, & Spinhoven, 2001), the use of positive reappraisal and problem-solving seem to make people less vulnerable to emotional problems (Aldao &

Nolen-Hoeksema, 2010). As parenting and the role as a mother likely elicit an array of positive and negative emotions, a woman's habitual tendency to use different emotion regulation strategies may influence her level of well-being postpartum. The relationship between emotion regulation strategies and PPD has thus far not been explored. However, as diagnostic manuals suggest PPD to resemble depression in terms of etiology, it is likely that the use of different emotion regulation strategies may influence symptoms of PPD as well. If so, cognitive emotion regulation strategies could be an important target for tailored preventative efforts of PPD.

## **2. AIMS OF THE STUDY**

Though numerous studies have assessed risk factors for PPD, these risk factors explain only in part the development of PPD (Bloch et al., 2005). Hence, there is an urgent need to explore other potential factors that may put new mothers at an increased risk for PPD, and to develop a deeper understanding of some of the established psychological risk factors.

The main purpose of this thesis was to investigate the unique contribution of some psychological variables on postpartum depressive symptoms. In line with a preventative framework, the focus was on psychological variables that could potentially be modified if targeted in an intervention. In order to explore how the variables predicted postpartum depressive symptoms over time we did a longitudinal study.

In addition, we did a separate interview study in order to get a better understanding of how first-time mothers in Oslo, Norway experience the postpartum period. To our knowledge, qualitative studies on postpartum depression have (understandably) thus far included only postpartum women who were depressed. The present interview study, however, aimed to interview a diverse group (depressed, slightly depressed, content) of postpartum women in order to get a better understanding of why some new mothers become depressed while others do not. The overarching aim was, as with the longitudinal study, to learn more about factors related to postpartum depressive symptoms and well-being, and hence to learn more about how PPD possibly can be prevented.

To our knowledge, qualitative studies on PPD have been based on non-Norwegian samples. Norway are among some very few countries in the world that makes great efforts in accommodating parents with a newborn child by means of full paid maternity/paternity leave

for about a year. Three out of twelve months are reserved for the father/partner. Thus, a secondary aim of the interview study was to explore what Norwegian mothers emphasize with regards to well-being and postpartum depressive symptoms.

### **Paper I**

This paper aimed to explore how psychological variables such as general self-efficacy, breastfeeding self-efficacy and dimension of social support related to PPD in a cross-sectional design. It has been suggested that the etiology of PPD is similar to that of depression, thus it was hypothesized that a greater sense of general self-efficacy would relate negatively to postpartum depressive symptoms. Similarly, it was hypothesized that greater breastfeeding self-efficacy would relate negatively to PPD. Extensive research shows social support to be an important predictor of both depression and PPD, however, it is unclear which aspect of social support that is most important to new mothers. The present paper sought to explore this further.

### **Paper II**

In this paper the main aim was to explore in a qualitative design how first-time mothers in Norway experience the transition of becoming a mother. Specifically, the aim was to gain insight into how new mothers describe, experience and interpret their own postpartum period, and to understand better why some find being a mother to be so emotionally taxing to the extent that they feel some level of depressed mood, while others remain mostly content after having a baby. One of the central objectives in qualitative research is to facilitate the application of findings. A qualitative study can provide a more exhaustive account of a phenomenon, which in turn may increase the generalizability of the findings.

### **Paper III**

In this paper findings from paper I were investigated further in a longitudinal design. Also, as the use of cognitive emotion regulation strategies have been found to correlate with various psychopathologies, the relation between emotion regulation strategies and PPD was explored. The predictive role of psychological variables has largely been neglected in longitudinal studies on PPD. The present study hypothesized that breastfeeding self-efficacy, cognitive emotion regulation strategies, and various aspects of social support would predict the

occurrence of PPD as well as a change in PPD over time.

### **3. MATERIALS AND METHOD**

#### **3.1 Design**

This thesis comprises two studies; a longitudinal survey-questionnaire and a qualitative study based on semi-structured interviews.

##### **3.1.1 Samples**

###### **Paper I and III**

The data reported and discussed in papers I and III were collected from the longitudinal survey-questionnaire. Postpartum women who gave birth at Oslo University Hospital between May 2008 and December 2009 were invited to take part in the study that collected data at the following time points: at 6 weeks (t1), 3 (t2) and 6 (t3) months postpartum. In order to be eligible to participate one had to be at least 18 years of age, able to read and write Norwegian, have access to the internet (and have an electronic mailing account), and the baby could not be in the intensive care unit. Paper I is a cross-sectional study based on data from t1 (6 weeks postpartum). When the analyses for paper I started, 483 mothers had completed the questionnaire at t1. Paper III is based on (a panel of) the total sample. 737 (64% response rate) postpartum women completed the electronic survey-questionnaire at t1, 481 completed the questionnaire at t2 (65 % response rate based on 737), and 344 postpartum women completed all three questionnaires (71.5% response rate).

###### **Paper II**

The data reported and discussed in paper II is based on semi-structured interviews conducted with 12 first-time mothers. The mothers were self-selected to participate in the interview study. All participants were recruited through posters placed in well-baby clinics in Oslo, Norway. Eligibility criteria for participation were that the participants had given birth during the last year, and that they wished to share their experiences and thoughts about the pre-and postpartum period, both good and less good experiences. The participants were interviewed in turn and recruitment was terminated once the analyses reached saturation point.

#### **3.2 Measures in the Survey Questionnaires**

The complete survey-questionnaire can be found in the appendix. Only the measures described below were used in the present PhD project. In the longitudinal study, the same scales (except demographics) were assessed on all three time points.

### **Postpartum depressive symptoms: Main outcome variable in Papers I and III**

**3.2.1** Postpartum depression was measured by The *Edinburgh Postnatal Depression Scale* (EPDS; Cox, Holden, & Sagovsky, 1987). This is a 10-item self-report instrument that assesses postpartum depressive symptomatology during the last 7 days. Items are rated on a 4-point scale from 0 to 3 to produce a summative score ranging from 0-30, with higher scores indicating elevated risk for postpartum depression. The EPDS is the most extensively applied measure of postpartum depression (Boyd, Le, & Somberg, 2005). This scale was developed to assess PPD more specifically as general measures of depression have been found to be inadequate. The unique quality of the EPDS compared to other measures of depression is that it does not assess depression based on symptoms that are common to largely all new mothers, such as loss of energy, feeling tired, changes in appetite and sexual drive. The EPDS has been found to correlate highly with other well-established measures of depression (Eberhard-Gran et al., 2001; Harris, Huckle, Thomas, Johns & Fung, 1989). A Norwegian translation of the EPDS has been validated on two Norwegian samples (Berle et al., 2003; Eberhard-Gran et al., 2001). Cox and colleagues (1987) originally recommended a cut-off score of  $\geq 12$  as an indication of depression, however, a cut-off score of  $\geq 10$  has been recommended for community-based screening and has been shown to have high sensitivity, specificity, and predictive power for postpartum depressive symptomatology. Thus, a cut-off score of  $\geq 10$  was used in the present study.

### **Predictors in Papers I and III**

**3.2.2** The *Generalized Self-Efficacy Scale* (GSE) is a 10-item psychometric scale that was used to measure optimistic self-beliefs to cope with a variety of difficult demands in life (Jerusalem & Schwarzer, 1993). The scale has been used in many studies, and has been translated into several languages, including Norwegian (Røysamb, Schwarzer & Jerusalem, 1998). In contrast to other scales designed to assess optimism, GSE explicitly refers to personal capability, i.e., the belief that one is capable of performing in a certain manner to attain certain goals. Participants rate their agreement with the statements on a four-point scale to produce a summative score ranging from 10-40, with higher scores indicating a higher

sense of self-efficacy. A sample item includes: “I can always manage to solve difficult problems if I try hard enough.” Possible endorsements are strongly disagree (1), somewhat disagree (2), somewhat agree (3) and strongly agree (4).

**3.2.3 The *Breastfeeding Self-Efficacy Scale* (BSES-SF; Dennis 2003)** is a 14-item scale used to assess breastfeeding self-efficacy. All items are preceded by the phrase “I can always” and anchored with a 5-point Likert-type scale where 1 indicates *not at all confident* and 5 indicates *always confident*. As recommended by Bandura (1977), all items are presented positively, and scores are summed to produce a range from 14 to 70, with high scores indicating a high level of breastfeeding self-efficacy. A sample item includes: I can always... “Ensure that my baby is properly latched on for the whole feeding.” The total score can be used to quantify the level of a mother’s breastfeeding self-efficacy and the scores of individual items can be used to diagnose specific areas where a mother lacks self-efficacy and requires targeted intervention (i.e. individualize confidence-building strategies) (Dennis, 2002). This tool has been psychometrically tested in a number of studies and demonstrates good reliability and validity (Dennis & Faux, 1999). Independent researchers translated and back-translated the scale into Norwegian for the present project.

**3.2.4 The *Berlin Social Support Scales* (BSSS, Schwarzer & Schulz, 2000)** were developed based on theoretical considerations and reviews of established measurement instruments for social support. The multidimensional approach of measuring social support is a unique feature that distinguishes this inventory from other questionnaires. BSSS consists of 32 items divided on 4 subscales; perceived available support (PAS, 8 items), received support (RS, 15 items), need for support (NS, 4 items), and support seeking (SS, 5 items) that measure both cognitive and behavioral aspects of social support. The answering format is the same for all subscales: Participants rate their agreement with the statements on a four-point scale. Possible endorsements are strongly disagree (1), somewhat disagree (2), somewhat agree (3) and strongly agree (4). Validity and reliability have been demonstrated in several studies (Schulz & Schwarzer, 2003; Schulz & Schwarzer, 2004).

### **Additional predictor in Paper III**

**3.2.5 The *Cognitive Emotion Regulation Questionnaire* (CERQ-SF; Garnefski & Kraaij, 2006)** is an 18-item scale that was developed both on a theoretical and empirical basis and measures a total of nine different cognitive coping strategies. Two items measure each

cognitive emotion regulation strategy. The questionnaire also affords the possibility of examining the relationships between the use of certain cognitive coping strategies, other personality variables, psychopathology and other forms of problems. Participants rate their agreement with the statements on a five-point scale. The scale assesses the extent to which the person - ‘(nearly) never’ (1), ‘sometimes’ (2), ‘regularly’ (3), ‘often’ (4) or ‘(nearly) always’ (5) - makes use of a certain cognitive coping strategy. In contrast to other coping questionnaires where no explicit distinction is made between someone's thoughts and that which someone actually does, this questionnaire refers solely to what someone thinks regarding a given situation. The different cognitive strategies are: *Blaming yourself*, referring to thoughts in which you hold yourself responsible for what happened to you, *Accepting*, referring to thoughts where you resign yourself to what has taken place, *Ruminating*, referring to thinking about the feelings and thoughts associated with the negative event, *Concentrating on other, positive aspects*, referring to thinking about other, pleasant things instead of the event in question, *Concentrating on planning*, or thinking what steps must be taken to cope with the event, *Positive reinterpretation*, or giving positive significance to the event in terms of personal growth, *Putting into perspective*, or saying that worse things happen in the world, *Catastrophizing*, referring to constantly recurring thoughts about how terrible the event was *Blaming others*, referring to thoughts in which you hold other people responsible for what happened to you (Garnefski et al., 2001). The 18-item version of the CERQ has been demonstrated to have good psychometric properties and to correlate highly with the original 36-item version (Garnefski & Kraaij, 2006).

### **3.3 Interview-guide used in study II (Paper II)**

The interview schedule was developed by the author (SMH). It asked participants to describe their pregnancy and birth experience, how they had pictured the postpartum period and how they experienced it, what they found challenging or enjoyable, how they dealt with challenges and how challenges affected them, what their social network was like, including the relationship with the partner, and what they themselves considered important with regards to well-being in the postpartum period. See Appendix for the complete interview guide.

### **3.4 Statistical Analyses**

**Papers I and III:** The Statistical Package for the Social Sciences (SPSS) for Windows (version 16.0 and 18.0; Inc., Chicago, IL, USA) was used to register and analyze data in paper



I and III. In paper I, descriptive statistics for participants' age, educational level, marital status and ethnic background were computed using means and standard deviations for continuous variables and proportions for categorical variables. To reveal the overall relationship between variables, Pearson correlations were computed for continuous variables. Hierarchical multiple regression analyses were used to predict PPD (treated as a continuous variable).

In **Paper II** the data were rigorously transcribed verbatim, and was analyzed by means of thematic analysis. Thematic analysis is a method for identifying, reporting, and analyzing patterns, or themes, within the data. It differs from other methods such as thematic decomposition analysis and grounded theory, which are theoretically bounded. We were interested in the women's qualitative experience of the postpartum period, and in the issues they themselves raised in relation to it. Our themes were identified in an inductive manner (i.e. the themes are strongly linked to the data). Importantly, the keyness of a theme was not necessarily determined based on frequency and prevalence, but rather on whether it captured something essential in relation to the research question. Furthermore, as our research question was fairly broad we decided to give a rich thematic description of the entire data set. Finally, we took a semantic approach in that we did not look for a deeper meaning beyond what the participant said.

In **Paper III**, multilevel modelling (MLM) was employed in order to test whether variation in PPD could be explained by the predictors in the present study. MLM is advantageous with this kind of data in which repeated measurement occasions (level 1) are nested within participants (level 2) (Singer & Willett, 2003). This is because MLM accounts for dependence of residuals due to covariance between the levels in the data. Ignoring such effects gives biased estimates of standard error, which could ultimately lead to wrong inferences about the effects in the data.

### **3.5 Ethical Considerations**

The study was carried out in accordance with the Helsinki Declaration and approved by the Regional Committee for Medical and Health Research Ethics (REK sør-øst) and the Norwegian Social Science Data Services (NSD). In the longitudinal study, a nurse/midwife met all potential participants in the hospital after delivery (typically just before leaving the hospital), informing them about the study. The women received written information, and they

signed informed consent before participating in the study. Still, it is important to reflect upon some ethical considerations.

First, a new mother is typically in an emotionally fragile state, and she might therefore find it harder to decline participation in a study, especially if the study is promoted by the hospital staff. In an effort to decrease a sense of pressure, the women were simply informed about the study, and they were told that they themselves could approach the hospital staff if they were interested in participating. Moreover, it was made clear that they simply consented to being contacted about the study 6 weeks postpartum, and that they would be free to decline participation at that point. It was also emphasized that participating/not participating would not influence their hospital stay in any way. Second, we also considered how completing scales assessing depression and other potentially loaded scales such as measures of social support and breastfeeding self-efficacy could potentially evoke negative emotions in the participants. Importantly, however, these are issues that are also addressed in other settings (for instance, well-baby clinics), and should therefore not be novel to the mother. Third, the participants would not necessarily have a direct benefit from completing somewhat time-demanding questionnaires. Still, the results might benefit other mothers at a later time as the findings may be helpful in preventing the development of PPD.

In the interview study, health nurses in well-baby clinics informed new mothers of the study. The mothers received written information and signed informed consent prior to participation. Still, the interview study raises in particular one ethical issue. The interviewees were asked to describe how they experienced the postpartum period, and for some that could entail becoming aware of and reflecting on potentially difficult topics. Such reflection could potentially induce or enhance negative emotions and make the mothers uncomfortable. The interviewer was prepared for such occasions, and made efforts to accommodate and validate the interviewee's feelings, as well as making her aware of where she could receive assistance if needed.

## **4. SUMMARY OF PAPERS**

### **4.1 Paper I**

**Background:** Postpartum depression (PPD) is a serious health issue affecting as many as 10-15% of women. The purpose of the present cross-sectional study was to explore how

psychological variables such as general self-efficacy, breastfeeding self-efficacy and four dimensions of social support were related to postpartum depressive symptoms 6 weeks postpartum. **Method:** The data were collected by means of a self-administered questionnaire. Analyses were based on a sample of 483 new mothers. Data were analyzed by Pearson correlation coefficient and stepwise regression analyses. **Results:** Results indicated that self-efficacy and breastfeeding self-efficacy were negatively associated with postpartum depressive symptoms. Among the measures of social support, only perceived available support predicted postpartum depressive symptoms. **Conclusion:** This study illustrates the importance of taking into account psychological variables with regards to postpartum depressive symptoms. Importantly, it demonstrates what aspects of social support that matters most to postpartum women. Implications for preventative efforts are discussed.

#### 4.2 Paper II

**Background:** 10-15% of women experience postpartum depression. First-time mothers are suggested to be at particularly risk. The present qualitative study aimed to gain insight in terms of why some women find early motherhood to be so emotionally taxing that they feel some level of depressed mood, while others feel mostly content after having a baby. **Method:** Semi-structured interviews were conducted with 12 self-selected first-time mothers. Participants described their pregnancy and birth experience, expectations and experiences with regards to the postpartum period, social support, and what they considered important with regards to well-being and depression in the postpartum period. Data were analyzed by means of thematic analyses. Ethical approval was granted by the Regional Ethics Committee. **Results:** Two approaches to motherhood emerged which we refer to as 'relaxed' and 'controlled.' These approaches influenced how the mothers had envisioned the postpartum period and how they experienced it emotionally, as well as their need for mastery. Social support and managing breastfeeding stood out as important factors/issues with regards to well-being and depressive symptoms. **Conclusion:** Frequent consultations with midwives and public health nurses during the pregnancy and the postpartum period offer unique opportunities for preventive work. The consultations should to a greater extent focus on the woman's expectations and needs. The partner should also be invited for an open discussion on how they best can support each other in this vulnerable period.

#### 4.3 Paper III

**Background:** Postpartum depression (PPD) is a serious health issue affecting as many as 10-15% of women. This longitudinal study aimed to explore how cognitive emotion regulation strategies, breastfeeding self-efficacy (BSE) and dimensions of social support predicted postpartum depressive symptoms (EPDS). **Method:** The data were collected by use of web-based survey questionnaires between May 2008 and December 2009, in a sample of 737 new mothers. The same questionnaire was surveyed at three points in time: 6 weeks, 3 months, and 6 months postpartum. 344 participants completed all three questionnaires. Panel data were analyzed using multilevel modelling (level 1: time, level 2: person). **Results:** Results showed that BSE, certain cognitive emotion regulation strategies, perceived available support, and need for support predicted the level of postpartum depressive symptoms. Only breastfeeding self-efficacy predicted change in postpartum depressive symptoms. **Conclusion:** This study illustrates the significant relevance of focusing on breastfeeding with regards to PPD as well as different aspects of cognitive emotion regulation strategies and social support. Implications for preventative efforts are discussed.

## 5. DISCUSSION

The postpartum period represents a vulnerable time where the woman is at increased risk for mental disorders (Munk-Olsen et al., 2006). Research suggest depression rates to be equally high among new mothers compared to other groups of women in the childbearing age even though the number of risk factors seems lower among postpartum women (Eberhard-Gran & Slinning, 2007). Thus, illustrating the pressing need for health care workers to identify and support new mothers with, or at risk for, PPD at an early stage. Because of relative frequent visits at well-baby clinics the year after birth the opportunities to identify and help women at risk are many and should be utilized. As it is often difficult to predict who are at risk (Horowitz & Goodman, 2005), the present thesis sought to contribute to the knowledge of risk factors of PPD.

### 5.1 Discussion of the main findings

The key findings reported in Paper I were that general self-efficacy (GSE), breastfeeding self-efficacy (BSE) and perceived available support (PAS) predicted symptoms of PPD (as measured by the EPDS). These three variables explained 29% of the total variance in the EPDS. As the study was cross-sectional, these relations were explored further in a longitudinal design (Paper III). Because BSE was found to be a greater predictor of PPD than

GSE, GSE was not included as a potential predictor in Paper III. To get a deeper understanding of how cognitive aspects related to PPD, cognitive emotion regulation strategies were included among potential predictors along with BSE and different aspects of social support. The key findings in Paper III were that greater BSE and higher levels of PAS predicted less depressive symptoms postpartum. A higher need for support predicted more depressive symptoms. In terms of cognitive emotion regulation strategies, the habitual use of various strategies was related to PPD as expected from theory on depression. The strategies of ruminating, blaming oneself, and catastrophizing were all related to higher levels of depressive symptoms, while the use of positive reappraisal and concentrating on planning predicted lower postpartum depression scores. Combined, these variables explained 37% of the variance in EPDS. Findings from Paper II (the interview study) were in accordance with findings from Paper I and III showing that social support and breastfeeding were of great importance to the mothers. In addition, it shed light on other central variables with regards to well-being and PPD.

#### **5.1.1 General self-efficacy, breastfeeding self-efficacy, and postpartum depression**

According to Bandura's (1986) social cognitive theory, individuals possess a self system that enables them to exercise a measure of control over their thoughts, feelings, motivation, and actions. Central to his theory is the concept of self-efficacy beliefs - "beliefs in one's capability to organize and execute the courses of action required to manage prospective situations" (Bandura, 1997, p. 2). Self-efficacy judgments are both task- and situation-specific, contextual if you will, and individuals make use of these judgments in reference to some type of goal.

Some studies have shown how GSE (Howell et al., 2006) and maternal self-efficacy relate to PPD (Coleman & Karraker, 1997; Cutrona & Troutman, 1986). BSE, however, represents a relatively under-researched risk factor for PPD. The importance of GSE with regards to PPD was explored in Paper I, and was indeed found to predict depressive symptoms postpartum. BSE, however, was (in Paper I) found to comprise a more important predictor, and its relation to PPD was thus explored further in a longitudinal study (Paper III). The relative importance of BSE over GSE is consistent with Bandura's theory. He argues that the most general self-efficacy assessment attempts to measure a general sense of efficacy or "confidence", and such general measures are obscure about just what is being assessed and they create problems of

predictive relevance (Bandura 1986, 1997). General self-efficacy instruments provide global scores that attempt to measure a generalized personality trait rather than the context-specific judgment Bandura suggests self-efficacy to be. In essence, a measure of general self-efficacy assesses people's general confidence that they can succeed at tasks and in situations without specifying what these tasks or situations are. Instead Bandura (1997) suggests that "self-efficacy beliefs should be measured in terms of particularized judgments of capability that may vary across realms of activity, different levels of task demands within a given activity domain, and under different situational circumstances" (p. 6). Because self-efficacy assessments often lack the specificity of measurement and consistency with the critical task that optimizes the predictive power of self-efficacy beliefs, results minimize the influence of self-efficacy. Thus, efficacy beliefs should be assessed at the optimal level of specificity that corresponds to the task being assessed.

Our studies (Paper I and III) showed that BSE was a particularly important predictor of symptoms of PPD. As a new mother, breastfeeding is one of the critical tasks one attempts to master. As such, it is not surprising that a greater sense of self-efficacy when it comes to breastfeeding is more relevant to a new mother's level of well-being than a general measure of self-efficacy. In Norway, breastfeeding is considered to be very important for the infant's physical as well as mental health, and great value is attached to managing breastfeeding successfully. In turn, it makes sense that there are emotional consequences of succeeding or not succeeding with breastfeeding.

In the semi-structured interviews (Paper II) it was, in accordance with Bandura's theory, expected that first-time mothers with a higher level of self-efficacy would likely show less depressive symptoms. Most mothers, however, rarely talked of self-efficacy, but rather talked of actual mastery. Furthermore, a lack of mastery was for many a source of marked concern and decreased well-being. In line with the findings in Paper I and III, a sense of mastery when it came to breastfeeding emerged as quintessential to well-being and depressive symptoms. In fact, every interviewee, talked extensively about the importance of succeeding with breastfeeding. All but one felt that society, including professionals at the well-baby clinics, exerts an immense pressure with regards to breastfeeding, and that being a good mother requires that you breastfeed. Many described how they had struggled a lot with breastfeeding

during the first weeks and oftentimes months, and failing or succeeding with breastfeeding was closely tied to well-being and depressive symptoms among these first-time mothers.

All three papers in the present thesis demonstrated the importance of managing breastfeeding and its implications for postpartum depressive symptoms. However, it is important to note that these findings may not be generalizable to other western cultures. Norway is unique in terms of accommodating new mothers and their babies by means of full paid maternity leave for about a year. Even after the woman returns to work she is given 2 hours off each day in order to have time for breastfeeding. These efforts enable new mothers to breastfeed their babies for the recommended 6 months (WHO, 2001). The flipside to this luxury is the assumption that all new mothers should be able to breastfeed, that they should breastfeed their baby because this is the very best nutrition to the baby, and that this is something all mothers enjoy and feel delighted about. There is no practical reason for why they should not breastfeed. Many new mothers struggle with breastfeeding because it can be very painful in the beginning and many have a hard time being able to trust that they produce enough milk to ensure the baby's growth. However, the threshold for making use of substitute is extremely high because so much emphasis is put on the advantages connected to breastfeeding. In turn, many new mothers endure painful and worrying weeks and oftentimes months in order to breastfeed their baby, and, as the present thesis have demonstrated, this effort can result in decreased well-being and even postpartum depressive symptoms. It may seem as though the Norwegian way works well for women who manage breastfeeding successfully, however those who for some reason do not manage to breastfeed (or do not want to breastfeed their baby/or do not enjoy breastfeeding their baby) are perhaps made more vulnerable to develop PPD. In some other western countries, official practices with regards to maternity leave are not adapted in such a way to accommodate frequent breastfeeding. Rather, new mothers are typically given only a few weeks maternity leave. Hence it may be the case that there is less of a social presumption that new mothers should breastfeed, and in turn less stigma associated with not breastfeeding. Instead, when these mothers breastfeed their babies they do so for 'personal' (i.e. intrinsically motivated) reasons.

### **5.1.2 Social support**

As outlined in the introduction, providing social support for the new mother has historically and cross-culturally been of essence in postpartum rituals. Historically, social support has

helped decrease mortality rates among child-bearing women, it has eased the transition of becoming a mother, and it has likely enhanced the well-being of a new mother. Recent studies have explored the relation between social support and well-being among new mothers, and meta-analyses suggest low level of social support to be one of the strongest predictors of PPD (Beck, 1996, 2001; O'Hara & Swain, 1996). Social support is a concept that encompasses several dimensions, and previous studies do not specify what dimension of social support that is most important to postpartum women. We (Paper I and III) assessed four dimensions of social support (perceived available support, received support, need for support, and support seeking) and found that perceived available support (Paper I and III) and need for support (Paper III) were significant predictors of postpartum depressive symptoms. Specifically, women who reported a higher need for support exhibited significantly more symptoms of PPD. It is possible that a higher need for support reflects a higher degree of uncertainty or feeling of helplessness, which may constitute a vulnerability for PPD. Women who perceived that they had a higher level of available support scored significantly lower on measures of PPD. This may imply that it is the feeling of not being alone that is crucial when becoming a mother. This is in accordance with previous research that demonstrates how a sense of a strong social network and the ability to count on others make up the fundamental protective elements of social support (Cutrona & Troutman, 1986). The importance of perceiving social support to be readily available is also consistent with Stern's (1998) ideation that new mothers' primary goal is not to receive practical support, but to be part of a group where the members have common experiences and share the same interests and needs. As described introductory, Stern (1998) posits that western, postindustrial societies fail to provide the new mother with adequate support, and it is interesting to note that the importance of high quality postpartum care for women through available support is debated in a recent report by Norwegian researchers (Eberhard-Gran et al., 2010). They describe a current trend to increase the focus on the newborn baby's needs and the importance of breastfeeding, while at the same time reducing care efforts directed towards the mother. Consistent with the importance of perceived available support with regards to PPD found in Paper I and III, Eberhard-Gran et al. (2010) suggest that a reduction in postpartum care may comprise a contributing factor to the relatively high prevalence rates in recent studies in Norway (Dørheim, 2009; Glavin et al., 2009; Haga, Ulleberg, Slinning, Kraft, Steen, & Staff, submitted).



Consistent with previous research, social support was unanimously emphasized as an essential component in facilitating well-being in the interview-study (Paper II). In particular, emotional and practical support from the partner were consistently reported to be crucial, and several expressed a need for the partner to acknowledge and validate their feelings and concerns. While Stern (1998) put great emphasis on the importance of social support among women, the present findings highlight the fundamental role the partner plays in terms of social support. It is likely that the partner now plays a more significant role in terms of fulfilling a new mother's need for support as our modern society is geared towards the importance of the nuclear family. Indeed, a recent study (Røsand, Slinning, Eberhard-Gran, Røysamb, & Tambs, 2011) demonstrated how partner relationship satisfaction was quintessential to the well-being of women in their early pregnancy. Taken together, our findings (Paper II) and the study by Røsand et al. (2011) illustrate the central role a partner plays in this time of a woman's life. The presence of and practical help from close family were also repeatedly mentioned as important with regards to well-being. The importance of emotional and practical support is in accordance with Asten et al.'s (2004) findings in their elaborate study of western and non-western cultures. Specifically, they found that a lack of emotional and practical support from marital and family relationships to be related to unhappiness or PPD.

### **5.1.3 Cognitive emotion regulation strategies**

The relation between a mother's use of different cognitive emotion regulation strategies and PPD was explored in the longitudinal study (Paper III). The habitual use of rumination, self-blame and catastrophizing have previously been found to be associated with psychopathology, and positive reappraisal and planning have been found to make people less vulnerable to emotional problems (Aldao & Nolen-Hoeksema, 2010; Garnefski et al., 2001). Research findings indicate that the symptoms of PPD mostly overlap with symptoms of depression, suggesting a similar etiology (Brockington, 2004). In accordance with theory we found that women who scored higher on the use of self-blame, rumination and catastrophizing scored higher on postpartum depressive symptoms at all three time points, and women who tended to use more positive reappraisal and planning scored lower on measures of PPD. Research suggests that a person's habitual use of emotion regulation strategies can be modified (Campbell-Sills & Barlow, in Gross, 2007). Thus, cognitive emotion regulation strategies should have an important and central place when exploring factors related to PPD. As with depression (Campbell-Sills & Barlow, in Gross, 2007), a potential target for intervention for

PPD could therefore be to educate new mothers of alternative ways to cope with negative emotions/experiences in the postpartum months.

## **5.2 Other risk factors**

The interview schedule in the interview study (Paper II) was deliberately broad-based and wide-ranging with open-ended questions, and was designed to allow women to tell their own stories, rather than adhering to a strict structure. Participants were asked to describe their pregnancy and birth experience, how they had pictured the postpartum period and how they experienced it, what they found challenging or enjoyable, how they dealt with challenges and how challenges affected them, what their social network was like, including the relationship with the partner, and what they themselves considered important with regards to well-being in the postpartum period. Interestingly, as noted above, two of the main themes that spontaneously emerged with regards to well-being and depressive symptoms among all the interviewees were breastfeeding and social support, confirming the significance of these variables in the postpartum period. There were however other factors that emerged with regards to postpartum depressive symptoms. For instance, a mother's *expectations* and the related, but distinct concept of *preparation* stood out as central factors. Mothers who recalled having had quite specific expectations regarding the birth and the postpartum period, were the ones who were most vulnerable in terms of unfulfilled expectations, and once expectations were not met they felt disappointed and sometimes depressed. In addition personal style or approach to motherhood emerged as an important factor. Specifically, we identified two approaches which we (in accordance with the mothers' own words) labelled 'relaxed' and 'controlled'. It is important to note that it was the 'controlled' mothers who reported having had the most specific expectations, and who had thus attempted to prepare so that things would go according to plan. These findings demonstrate how the same psychological variables (expectations and preparation) may relate differently to a given outcome, in this case PPD, depending on a person's style or personality. This intricate relation among variables demonstrates the complexity one needs to be aware of when attempting to understand underlying causes of a given problem, such as PPD.

## **5.3 Personal approach & the use of cognitive emotion regulation strategies.**

Although an explicit comparison is unfeasible, it is interesting to speculate whether the personal approaches to motherhood we identified in Paper II are somehow related to a

person's use of different cognitive emotion regulation strategies assessed in Paper III. One could for instance speculate that a 'controlled' mother is more prone to making greater use of rumination, blaming herself, and catastrophizing, while a 'relaxed' mother is more likely to make use of planning and positive refocusing. The relation between a mother's personal approach to motherhood and the use of different cognitive emotion regulation strategies should be explored in future studies. As already pointed out, research suggests that a person's habitual use of emotion regulation strategies can be modified (Campbell-Sills & Barlow, in Gross, 2007). A mother's personal style/approach to motherhood, however, is likely to reflect a part of her personality, and is in turn harder to change. Thus, if future studies find that a mother's personal style predisposes her to use certain strategies, one could argue that the emotion regulation strategies represent a modifiable aspect of an otherwise unamendable style.

#### **5.4 Are cross-sectional studies underrated?**

It is well-known in psychological research that one cannot establish causality in cross-sectional studies, and they are thus hard to publish. From a methodological point of view it is certainly true that we cannot determine cause and effect in a cross-sectional design, however it seems we have forgotten that a cross-sectional study can (from a more practical standpoint) still provide valuable knowledge, and should in consequence not be underrated. Indeed, the present thesis illustrates how findings from a cross-sectional study are supported in a longitudinal study. Upon reflection, there are reasons why a cross-sectional study may result in the same insight as a longitudinal study. To be sure, a cross-sectional study assesses the connection between variables. Importantly, however, there are (or at least there should be) pre-existing assumptions regarding the direction of the relationships, and those hypotheses are most often based on theoretical underpinnings. Thus, one could argue that it is more important, or at least equally important, to consider the theoretical underpinnings on which the hypotheses in a given study are founded, rather than simply considering the design of the study.

#### **5.5 Methodological Considerations**

An important aspect of psychology is its applicability to the world outside the laboratory, to assist in the solution of individual and social problems (Anderson, Lindsay & Bushman, 1999). That is also true for the present PhD project. The project comprises two studies that

aim to obtain further knowledge on PPD. More precisely, the studies seek to achieve a fuller understanding of what makes a new mother feel more or less content/satisfied during the postpartum period, and what makes her more likely to feel depressed or down. This PhD project raises certain methodological issues that deserve some reflection.

### **5.5.1 Survey questionnaires**

**Web-based questionnaires in survey designs: advantages and limitations.** Papers I and III in the present thesis are based on data collected by using web-based survey questionnaires. Survey-questionnaires are produced to provide quantitative descriptions of some aspect of the populations studied by asking people structured and predefined questions using a sample of the population, and they are among the most common methods used in psychological research (Pinsonneault & Kraemer, 1993). Gathering data by means of a web-based survey questionnaire has several advantages, but also some limitations. One of its advantages is that it is easy for the researcher to construct and distribute. The researcher can choose between several ways of distributing the questionnaire, like in the present study sending it to particular participants through e-mail. This illustrates another advantage of this data sampling method – it can be answered by the participants at their own convenience. Filling out a web-based survey may also feel more anonymous, and the participants may worry less about stigma and social desirability, which may increase the validity of the data. Finally, depending on the internet connection, the questionnaire can easily be accessed in many contexts and can be filled out when the participants feel most motivated, which may in turn also enhance the validity of the data.

There are, however, potential pitfalls when using this data sampling approach. First, the representativeness of the sample might be biased as inclusion criteria include internet skills and having an e-mail account. Presumably, internet skills and frequent internet use are more common among educated people.

Secondly, there is the issue of validity and reliability. The survey in the present thesis was constructed based on fundamental assumptions in psychological research. Namely, that in order to gain knowledge about a phenomenon one needs to use reliable and valid assessment methods. The fundamental assumption that reliable, valid scales can, and need to, be developed in order to gain knowledge on any given phenomenon is based on standard

methodology. Reliability addresses the degree of consistency or stability of a measuring instrument (Aron, Aron, & Coups, 2006), and an empirical measure is valid if it actually measures what it claims to measure (Cronbach & Meehl, 1955). The latent nature of psychological constructs makes them difficult to measure, however. It is easy to monitor physical behavior, but much harder to measure why we do what we do. The most straightforward approach is to simply ask people why they behave in a certain manner. The challenge, of course, is to what extent are people capable of monitoring their own behaviors, and to what extent people possess the introspective abilities needed to recognize and label their thoughts and emotions? As survey designs rely exclusively on the self-monitoring and introspection of the participants, it puts a heavy toll on the reliability and the validity of the scales used to measure constructs in psychological research. The scales used in the present survey were all previously validated measures. For instance, the outcome variable (EPDS) is the most extensively applied measure of postpartum depression (Boyd, Le, & Somberg, 2005). The EPDS has been found to correlate highly with other well-established measures of depression (Harris et al, 1989; Eberhard-Gran et al., 2001), suggesting convergent as well as construct validity to be satisfactory. Furthermore, the Norwegian translation of the EPDS has been validated on two Norwegian samples (Berle, et al., 2003; Eberhard-Gran et al., 2001).

As in many other surveys, however, the present survey made use of a short-form version of one of the predictor variables: cognitive emotion regulation questionnaire (CERQ). The usage of short-forms is mainly due to their practical advantages, such as reduced burden for the respondents and reduced competition for the limited space in the questionnaires. In the short-form of the CERQ, 9 two-item subscales measure 9 different strategies. The short-form was constructed by stepwise omission of the items with the highest 'alpha if item deleted' on the basis of reliability analyses results. Specifically, reliability analyses were performed on the nine original CERQ four-item subscales, then the items with the highest 'alpha if item deleted' were omitted, then reliability analyses were performed again on the three-item scales and finally the items with the highest 'alpha if item deleted' were omitted. Nine two-item subscales remained, leaving the original distinction into nine conceptually different scales intact. The 18-item version of Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, & Spinhoven, 2001) has been demonstrated to have good psychometric properties and to correlate highly with the original 36-item version (Garnefski & Kraaij, 2006). All alphas of the 9 different short-form subscales have been found to be acceptably

high, and comparable to the original scale (Garnefski & Kraaij, 2006). Only Self-blame was found to be relatively low (although acceptable) (.67). All other alphas ranged from .73 to .81.

It is important to note, however, that although the short-form has been found to demonstrate acceptable reliability estimates, generally speaking, overall validity may suffer from reduction of items and that a measure containing a greater number of items might provide more stability. Thus, if time and space permit, one should consider using the 36-item version.

**External and internal validity.** Validity is the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. In psychological research it is assumed that a method can be reliable, consistently measuring the same phenomenon, but not necessarily valid. Campbell (1957) distinguishes between internal and external validity. External validity concerns how far the results of a study can be generalized. External validity is for what other (a) settings, (b) populations, (c) treatment variables and (d) measurement variables can the same results be found? Practically, external validity is how and where else the study can be applied. Internal validity concerns the rigor with which the study was conducted (e.g., the study's design, the care taken to conduct measurements, and decisions concerning what was and wasn't measured) and (2) the extent to which the designers of a study have taken into account alternative explanations for any causal relationships they explore.

**External and internal validity in a longitudinal survey study.** The principles and reasoning behind a longitudinal study are based on the standard view of thinking about knowledge. Namely, that an objective, reality exists and the important thing is to measure what one wants to explore in a precise and stringent manner. Importantly, the ideal in the standard view is the randomized controlled experiment. Thus, a longitudinal survey study that is not randomized nor administered in a controlled setting cannot be said to be optimal in terms of gaining knowledge. A common criticism of the standard methodology is that although laboratory studies oftentimes are high on internal validity they fail to achieve high external validity. That is, studies done in the lab may tell you something about specific variables, but what do they say about the real world? The reality we wish to explore does hardly fulfill stringent criteria in a precise manner. In that sense one may say that a perfectly orchestrated randomized experiment may be able to say something about how for instance breastfeeding self-efficacy

can predict positive affect in a laboratory setting, but one cannot infer how breastfeeding self-efficacy will relate to positive affect for a new mother in her natural setting. Survey research, on the other hand, involves examining a phenomenon in a wide variety of natural settings and in that sense one might argue that, precisely because a survey does not fulfill the stringent methodological criteria of the standard approach, it may retain a higher degree of external validity (Pinsonneault and Kraemer, 1993). External validity, often referred to as generalizability, concerns the extent to which findings from a specific study (or sample), for instance postpartum women from Oslo University Hospital, can be applied to some target population (all postpartum women in Norway or even broader, all postpartum women in the world) (Robson, 1993). In addition to the obvious limitation in the present survey (Paper I and III), such as the relatively small N, and the fact that participants were recruited solely from Oslo, there were other biases that limit the generalizability of the findings. These are discussed elsewhere (under strengths and limitations) in more detail.

### **5.5.2 Semi-structured interview**

**Advantages and limitations of qualitative research.** Paper II in the present thesis is based on data from semi-structured interviews. This approach has both advantages as well as certain limitations. An obvious advantage in qualitative research is the opportunity for the participant to provide nuanced answers to questions, as well as clarify potential misunderstandings prior to answering. Importantly, the researcher is also at liberty to ask follow-up questions to further clarify a participant's statement. All of which may enhance the validity of the study. As in all qualitative research, a potential confounding variable in the present study was the influence of the interviewer on the respondents. Data from semi-structured interviews is an example of how the researcher makes use of contextualized methodology. The contextualized approach is based on views in philosophy that emphasize the context in which knowledge is obtained; knowledge is context-sensitive. What the interviewees (the postpartum women) say and do need to be understood relative to the context, in a case-sensitive manner. The context being a city (Oslo) in an industrial country, and the interviewer being a woman similar age in a research position. Obviously, the women's responses will be affected by the context. In the book, *Pattern of Discovery* (1972), Hanson seems to suggest that all we observe and say is theory-loaded. Hanson emphasizes that we tend to notice things only when we have expectations, often based on theory, which make them seem interesting and of relevance to us. That is, all carry a load of theory with it. Accordingly, scientists rarely (or never) "see with

the naked eye”. Hacking (1983) fortunately presents a more nuanced argument. Namely, that we all have various expectations, prejudices, opinions, habits, and working hypotheses in all kinds of situations, and we even express some of them from time to time. But these should not be lumped together and called a theory. To me it is not clear as to whether Hanson thinks of the theory-loaded burden we carry as a bias and limitation when we try to understand the world, or if he is merely stating what he sees to be a fact. It follows from his reasoning that we cannot rid ourselves from our theoretical bias, so are we then simply trying to find support for our theoretical assumptions? Regardless of what you observe and find you cannot be sure if you simply observed what you wanted to observe. As a psychologist it is easy to agree with Hacking’s arguments. We carry with us certain assumptions and they can influence how we see the world. In psychological terms this is typically referred to as schema. Obviously, it is important to remain aware of own presuppositions in a research setting.

**Validity in qualitative research.** As described above, validity in quantitative research refers to whether a method measures what it intends to measure. That, in turn, implies the existence of something constant in the real world, and it suggests that the researcher’s job is to unveil what it is (Howitt, 2010). As qualitative research is more focused on how the individual experiences and perceives the world (Elliot, Fischer & Rennie, 1999), the aforementioned definition of validity is not adequate or meaningful. Nevertheless, the concept of validity can certainly be useful in terms of discussing whether the analyses reflect the data. That is, the focus is rather on the validity of the analyses, and not on the objective validity of, for instance, a given scale (Howitt, 2010).

In Paper II, validity was sought enhanced by repeatedly cross-checking the emerging themes with the transcribed material/interviews. The transcriptions in turn were referenced with the taped interviews to ensure that they matched. As noted in Paper II, a methodological strength was the fact that two researchers analyzed the data independently, and then jointly. This might have reduced the level of subjectivity (and influence of personal presuppositions), as well as functioned as a verification of the themes (Elliot et al., 1999). It is also interesting to note that several of the findings in Paper II corresponded with the findings in the quantitative study (Paper I and III). As Elliot et al. (1999) argue, such a correspondence could be seen as enhancing the credibility of the study.



### **5.5.3 Do the interviews and surveys address the same phenomenon?**

Is it meaningful to compare findings from two fundamentally different studies; a longitudinal survey and semi-structured interviews, in an attempt to understand the same underlying phenomenon? Is it the same phenomenon? If not, is it still meaningful? Can I give a meaningful and coherent description of how variables and processes work together in influencing the experience of the postpartum period when not all aspects are studied explicitly?

**Narrow and broad definition of validity.** Kvale (1995) draws attention to the fact that there are both narrow and broad definitions of validity; there is the narrow positivist notion of validity that emphasizes whether a method measures what it is intended to measure, and in a broader sense validity concerns whether a method investigates what it is intended to investigate. According to the narrow definition, a qualitative study based on semi-structured interviews, which does not result in numbers, can by default, not be valid. According to the broader view, however, semi-structured interviews can lead to valid scientific knowledge. It seems appropriate to mention the fact that we as researchers and methodologist work in an area placed between methods and philosophy, and this PhD project is based on both standard and contextualist principles of methodology. While the standard methodology underlying the longitudinal study emphasizes a measurable, objective world, the contextualist approach in the interview study is more relativistic and emphasizes the importance of context-sensitivity of knowledge. To answer the first question of whether it is meaningful to compare findings from two fundamentally different studies it partly boils down to whether one employs a broad or narrow notion of validity, and whether one is concerned with internal or external validity. From a narrow methodological standpoint one would say that the two studies do not measure the same thing. From a broader point of view, however, both studies investigate well-being and depressive symptoms among new mothers, and together they can help us understand the real world of postpartum women.

**All aspects are not measured explicitly.** An obvious limitation in the longitudinal survey is that there are numerous aspects of the postpartum period that is not measured explicitly. In consequence, I can test whether breastfeeding self-efficacy at 6 weeks predicts postpartum depressive symptoms at 3 and 6 months, but there are endless variables in real life I know nothing about that can be equally (or more) important. Importantly, however, not knowing

everything about a phenomenon, in this case the postpartum period, does not imply that what you learn from a given study is meaningless. The important thing is to acknowledge the limitations of one's study, while at the same time recognize how the knowledge obtained in a study can be utilized. To answer the question of whether I can give a meaningful and coherent description of how variables and processes work together when not all aspects are studied explicitly, it seems clear that the data obtained from the longitudinal study cannot be *fully* coherent, but it can still provide meaningful information or knowledge.

#### **5.5.4 Strengths and limitations**

Among the most important strengths in this thesis is the longitudinal design of the survey questionnaire. Longitudinal data makes it possible to measure change, both intra-individual change and inter-individual change. Longitudinal data allows us to answer questions about how the outcome changes over time, and whether the predictor influences the outcome. Another strength is the thorough assessment of potential psychological predictors. All the scales were applied as previously validated, which strengthens the reliability and validity of the findings. A final strength of this thesis is that PPD was approached from both a quantitative and qualitative angle, which combined may enhance the generalizability of the findings.

Nonetheless, our findings must be interpreted carefully due to some limitations. First, as in all studies based on questionnaires, there may be response biases that cause spurious correlations between self-reported predictors and outcome variables.

Generalizability, or external validity, concerns the extent to which findings can be generalized from the specific sample in the study to some target population (Robson, 1993). The sample in the longitudinal study in the present thesis was found to be somewhat biased with regards to certain variables. Specifically, the sample comprised a large proportion of first-time mothers, and as many as 85% had completed a university degree. As suggested earlier (under methodological considerations) the sample might also be biased as inclusion criteria included internet skills and having an e-mail account. Presumably, internet skills and frequent internet use are more common among educated people. The fact that 85% of the sample had completed a university degree is consistent with that assumption. Finally, the inclusion

criteria of the study excluded mothers under the age of 18, and mothers who did not speak Norwegian. Both of which represent previously found high-risk groups for PPD.

## **6. FINAL REMARKS**

### **6.1 Implications**

PPD affects a relatively high proportion of new mothers and if the condition is severe and long-lasting, it can have a negative impact on the mother, her child and other family members. Thus, an important aim for health care workers is to identify and treat new mothers with depressive symptoms at an early stage. However, it is often difficult to predict who are at risk (Horowitz & Goodman, 2005). The present thesis found certain psychological variables to be associated with postpartum depressive symptoms. Importantly, the variables emphasized in the present thesis are potentially modifiable variables, suggesting that these factors are important to pay attention to when attempting to prevent PPD.

In terms of assessing risk factors for PPD, our findings in all three papers demonstrated that it is important for the mothers that they have a feeling that social support is available. From a preventative perspective, it is important to facilitate social support, both on the societal level and the familial level. A central objective could be for health care workers to enlighten significant others of what the new mother perceive to be important social support for her and her baby.

All three papers also made obvious the importance of breastfeeding. Specifically, Paper I and III highlighted the significance of having a higher level of breastfeeding self-efficacy. That is, having the belief that one has the necessary abilities to master breastfeeding. From the perspective of prevention, research on self-efficacy underscores the importance of doing more than modelling the correct behavior when attempting to enhance a person's level of self-efficacy when it comes to a concrete (new) skill. Thus, when attempting to enhance a new mothers sense of breastfeeding self-efficacy by means of modelling, one needs to combine the modelling with repeated practical and emotional support and feedback indicating whether she is doing it correctly. In Paper II, our findings confirmed the importance of breastfeeding, but here the focus was on actual mastery of breastfeeding. In Norway, breastfeeding is highly advocated by health care workers, and Paper II illustrated how new mothers therefore considered breastfeeding to be fundamental to successful parenting and being a good mother.

Moreover, a failure to master breastfeeding was closely tied to depressive symptoms. An important effort to minimize the pressure on new mothers, and in turn help prevent PPD, could be by presenting a more nuanced picture of the importance of breastfeeding.

This thesis has contributed to the growing amount of research on risk factors associated with PPD. The identification of risk factors is important because PPD can have severe consequences for the child's development, as well as the well-being of the mother and partner. Our results on social support, breastfeeding, and emotion regulation have generated knowledge that health authorities and health workers can target in preventative interventions for new mothers at increased risk of PPD. Future prospective studies in which social support, breastfeeding self-efficacy and emotion regulation strategies are included and manipulated are needed in order to explore whether (and how) these variables can be modified, and how their potential modification influence symptoms of PPD.

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The transition to motherhood

Title: A qualitative study of depressive symptoms and well-being among first-time mothers

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### **Author contribution**

Silje Marie Haga developed the design of the study, gathered and analysed the data, and drafted the manuscript. Anita Lynne contributed in the development of the interview-guide and participated in the analysis of the data. Kari Slinning revised the manuscript for important intellectual content, and Pål Kraft revised the manuscript and supervised the study.

## The transition to motherhood

### ABSTRACT

**Background and aim:** 10-15% of women experience postpartum depression. First-time mothers are particularly at risk. The present qualitative study aimed to gain insight in terms of why some women find the transition of becoming a mother to be so emotionally taxing that they feel some level of depressed mood, while others feel mostly content after having a baby.

**Method:** Semi-structured interviews were conducted with 12 self-selected first-time mothers. Participants described their pregnancy and birth experience, expectations and experiences with regards to the postpartum period, social support, and what they considered important with regards to well-being and depression in the postpartum period. Data were analyzed by means of thematic analyses. Ethical approval was granted by the Regional Ethics Committee.

**Results:** Two approaches to motherhood emerged which we refer to as 'relaxed' and 'controlled.' These approaches influenced how the mothers had envisioned the postpartum period, their need for mastery, and how they experienced it emotionally. Social support and managing breastfeeding stood out as important with regards to well-being and depressive symptoms.

**Conclusion:** Frequent consultations with midwives and public health nurses during the pregnancy and the postpartum period gives unique opportunities for preventive work. The consultations should to a greater extent focus on the woman's expectations and needs, and the partner should be present for an open discussion on how they best support each other in this vulnerable period.

**Key words:** qualitative study, postpartum depressive symptoms, breastfeeding, mastery, social support

## The transition to motherhood

### INTRODUCTION

The birth of a child marks the transition from one stage in a woman's life to another (1, 2). And although it can be a wonderful time, research suggests that it is also a vulnerable time for the woman (3) where she is at increased risk for mental disorders (4).

Psychoanalyst Daniel N. Stern has studied extensively what it means psychologically to become a mother. He uses the term "motherhood constellation" to describe a mental organization in which the child is most prominent. The motherhood constellation may be defined as the primary caregiver's own biological readiness state (2). Put differently, it represents a new and unique way for the new mother to organize herself, in which her primary preoccupation becomes the well-being of her baby. New concerns are in focus; can she maintain the life and growth of her baby, can she assure the baby's psychological development, can she create a necessary support system, and finally, can she facilitate all these functions.

Between 10-15% of women experience moderate to severe depressive symptoms after birth, often referred to as postpartum depression (PPD) (4, 5). PPD falls under the category of major depressive disorder, with standards for diagnosis found in the American Psychiatric Association's (6) *Diagnostic and Statistical Manual of Mental Disorder*, fourth edition, text revision (DSM-IV-TR), as well as in the *European Classifications of Mental and Behavioral Disorder* (ICD-10; 7). According to the diagnostic manuals (6, 7), description, symptoms, course and outcomes of PPD are similar to major depressive disorder (MDD). The only difference is the time of its occurrence. PPD strikes in a woman's life when she is expected to be as happy as can be, which obviously makes the experience of depression particularly arduous. The most

## The transition to motherhood

common symptoms of PPD are tearfulness, feelings of hopelessness, inadequacy, guilt, inability to cope with and feel joy over the new baby, agitation and anxiety, loss of appetite, poor concentration and memory, sleep disturbances, fatigue, social isolation, and suicidal ideation (8). It is important to note that not all women with moderate to severe symptoms of PPD meet DSM-IV criteria for depression.

Particularly, first-time mothers have been found to be at increased risk for PPD (5). A few studies on PPD have done in-depth analyses based on what the women themselves report (1, 9, 10). The majority of research, however, has been cross-sectional or longitudinal studies based on quantitative data (11, 5). Furthermore, most studies on PPD have tended to be disease-focused. That is, their main objective has been to investigate what put women at risk for developing depressive symptoms after having a baby. Undeniably, a large proportion of new mothers experience only a few depressive symptoms, and these have, understandably, typically not been the targeted in studies of PPD. In line with a more preventative framework, the present qualitative study sought to explore how first-time mothers experience the transition of becoming a mother. That is, we aimed to interview a heterogeneous group of first-time mothers in order to get at better understanding of why some new mothers feel more depressed than others. Specifically, the aim was to gain insight into how new mothers describe and experience their own postpartum period, and to understand better why some find the transition of becoming a mother emotionally taxing to the extent that they feel some level of depressed mood, while others remain mostly content after having a baby. The overarching aim was to gain more knowledge that may be helpful in developing preventative programs for PPD.

## METHODOLOGY

## The transition to motherhood

### Data collection and analysis

In-depth, semi-structured, tape-recorded interviews were conducted with 12 postpartum women. An interview schedule was developed with open-ended questions, with prompts and follow-up questions employed in order to elicit a breadth and depth in responses (12). The interview schedule was deliberately broad-based and wide-ranging, and was designed to allow women to tell their own stories, rather than adhering to a strict structure (12). The interview-guide was piloted on two mothers prior to the study. The final interview schedule asked participants to describe their pregnancy and birth experience, how they had pictured the postpartum period and how they experienced it, what they found challenging or enjoyable, how they dealt with challenges and how challenges affected them, what their social network was like, including the relationship with the partner, and what they themselves considered important with regards to well-being in the postpartum period. All interviews were conducted by the first author, and they were generally conducted in the women's own homes and lasted between one and a half hours to two hours. The data were rigorously transcribed verbatim where all verbal utterances were included, and analyses relied upon organizing sections of the data into recurrent themes (12). We were interested in the women's qualitative experience of the postpartum period, and in the issues they themselves raised in relation to it. We see our analysis as a 'thematic' analysis as described by Braun & Clarke (13). Thematic analysis is a method for identifying, reporting, and analyzing patterns, or themes, within the data. It differs from other methods such as thematic decomposition analysis and grounded theory, which are theoretically bounded. Thematic analysis is considered to be an appropriate method when dealing with a rich dataset due to its flexibility and adaptability (13). In accordance

## The transition to motherhood

with Braun & Clarke (13), our themes were identified in an inductive manner (i.e. the themes are strongly linked to the data (14)). Importantly, the keyness of a theme was not necessarily determined based on frequency and prevalence, but rather on whether it captured something essential in relation to the research question. Furthermore, as our research question was fairly broad we decided to give a rich thematic description of the entire data set so that the reader could get a sense of the important themes. Finally, we took a semantic approach in that we did not look for a deeper meaning beyond what the participant said (13). In organizing the data into themes, we followed Kissling's (15) recommendation to let the data itself suggest names for the themes, and took direct quotes from the transcripts to illustrate the kind of data classified by each theme. Due to space limitations, additional quotes are provided in the appendix. In an attempt to increase reliability and validity two qualitative researchers analyzed the data separately, and then jointly. Ethical approval was granted by the Regional Ethics Committee. The interviewer was educated in psychology, and was prepared to refer interviewees to professional help if needed.

## Participants

12 first-time mothers were self-selected to participate in the interview study. The participants were interviewed in turn and recruitment was terminated once the analyses reached saturation point. It is important to note that while additional nuances would probably be captured with a larger sample, the main themes described herein would remain (12). All participants were recruited through posters placed in well-baby clinics in Oslo, Norway. Eligibility criteria for participation were that the participants had given

## The transition to motherhood

birth during the last year, and that they wished to talk about their experiences and thoughts about the pre-and postpartum period, both good and less good experiences. The interviewees were thoroughly briefed before the interview and guaranteed confidentiality. They each gave their informed consent to participate in the study. The women ranged in age from 25-44 (mean=32.8). All were in steady relationships cohabiting with the father of the baby. The age of the babies ranged from 8 weeks to 8 months (mean = 4.7 months, median = 4 months). All of the 12 women had higher education from a university or college. Participants are referred to by numbers; P1-P12 in the results.

## RESULTS

### Key findings

During the interviews the women described themselves either as depressed (P3, P6, P8), slightly depressed (participants P2, P5, P9, P10, P11) or mostly content (participants P1, P4, P7, P12). The women were categorized based on their self-reported depressive symptoms and level of well-being. Two of the women (P6,P8) explicitly stated that they were depressed, and the third one (P3) described several symptoms (crying, hopelessness) that had lasted over several weeks, which in accordance with diagnostic criteria suggested that she was depressed. The ones who were categorized as slightly depressed described fewer symptoms of less intensity and shorter duration. It soon became evident that having a baby is a huge transition for everyone. The interesting question was however what characterized the mothers who felt some degree of depression versus those who felt mostly content. Herein we focus on a selection of key findings. The three main themes with subthemes are presented in table 1. On a broad



## The transition to motherhood

overarching level we identified two approaches a mother may employ in the postpartum period, which we refer to as 'relaxed' and 'controlled.' It became clear that these approaches greatly influenced both how the mothers had envisioned the postpartum period, and how they experienced it emotionally. We identified distinct subthemes with regards to personal approach: need for control and mastery, expectations, and preparation. Other main themes that emerged with regards to well-being and depressive symptoms regardless of personal approach were social support and the importance of managing breastfeeding.

INSERT TABLE 1 HERE

### Personal approach – controlled versus relaxed

As the comments below illustrate, the women varied markedly in how they approached the role of motherhood, and their personal approach greatly influenced several themes and well-being. It became clear that many of the women were used to being able to control most aspects of their lives, and it appeared as though they had envisioned mastering motherhood much the same way as education, work and other challenges. Once women with a higher need for control experienced that the postpartum period entailed a lot of unpredictability and challenges that could not easily be mastered they felt stressed and depressed.

P6. I think, like with me... you wait until you're past thirty to have a baby, you're used to having control...complete control over your life, and you're used to

## The transition to motherhood

master everything, and then suddenly you don't anymore. And things are not like you imagined. I think that is probably why I felt so depressed.

Others approached motherhood in a more relaxed manner:

P12. Well, I hadn't really thought about what kind of mother I am until I read this book, and it discussed how there are different parenting philosophies, and how we are with him is one way of doing it. I hadn't really thought about it, but our way is to let him control everything, and we try to create a calm atmosphere for him ...we're parents now, that's what we do...

*Personal approach: need for control/mastery.* The women's need for control and mastery varied depending on whether the mother approached motherhood in a more 'relaxed' or 'controlled' manner. The theme control emerged with regards to the pregnancy, birth, and postpartum period. A higher need for control was concurrent with close monitoring of dietary habits, and more detailed expectations regarding the birth. Interestingly, they typically wanted and expected a natural birth without pain relief, and they expressed disappointment if the birth did not go according to plan.

P8. The birth was completely opposite of what I had imagined. We were supposed to be at the ABC-clinic, and it was supposed to happen in the most natural way, no pain relief... except from perhaps acupuncture... but then the water broke, and the water was colored, an indication that the baby was stressed, so I was shipped

## The transition to motherhood

over to the regular area of the hospital... It was freezing, and all I wore was this hospital shirt and wool socks... it was nothing like I had imagined. I was supposed to be in this big room with a soft chair, bath, where I could easily move around... all this I was missing out on.

Some described a more relaxed and open-minded approach to the birth-experience, and how they trusted their own body and the qualified midwives at the hospital.

P7. I had planned to make use of epidural, but everything happened so fast so it was suddenly too late. It was extremely painful, but when I had gone through this huge experience without suffering too much it was sort of fun as well. But yes, I was definitely open to the idea of painkillers; you can't decide these things in advance. You have to play it by ear.

*Personal approach: preparation and expectations.* Expectations and preparations were important themes for most of the mothers, however, mothers with a higher need for control reported having taken several precautions to ensure that the pregnancy would go smoothly and they had spent a lot of time preparing practical matters related to the birth. Moreover, they had had quite detailed expectations about the birth, the postpartum period, and what the baby was going to be like. The one's who reported having had the most specific expectations also reported being most disappointed when expectations were not met.

## The transition to motherhood

P6. I looked forward to having the baby throughout the whole pregnancy. There was nothing I didn't look forward to. I even looked forward to the birth itself. That's probably why I 'fell so hard' when she came. I couldn't get her out, regardless of how hard I tried. At 04:15 a.m. our little princess came into this world with a c-section. That wasn't how I was supposed to have a baby. And I wasn't supposed to learn that I was having a girl this way. I was lying on my back listening to the doctors. I was so tired and so disappointed, I was so sad. My biggest nightmare had happened; I had to do a c-section. I hadn't been able to give birth to my baby; someone had to do it for me. I had carried her for 9 months, but I wasn't able to bring her into this world.

Some of the women, however, were more open-minded in terms of what the postpartum period would be like, and they had what they themselves referred to as more realistic expectations. Others had not had any specific expectations with regards to the postpartum period, or they had had some expectations, but did not express any discomfort when these were not met. P4. "I didn't really think about it at all... I guess I thought we'd be doing more than we are..."

Social support: The basic need for emotional and practical support

The importance of social support came up in every interview; regardless of personal approach. Emotional and practical support from the partner was invariably emphasized with regards to well-being. The women craved that their partners would 'protect' them

## The transition to motherhood

from external demands, such as limiting the amount of visitors. Another explicit need mentioned was the desire that the partner would take on the role as motivator and facilitator, and that he would actively partake in the feeding and diaper change. Even when it came to intimacy and sex the women expressed a wish that the partner would take more initiative. Several described how they wished that the partner would validate their feelings and concerns, and two reported that they often felt more like they had become a single mother, rather than a family.

P10. One thing that is hard to understand, one thing you're not prepared for is the feeling of loneliness. I had this idea about us becoming a family, more than me becoming a mother, but then he had to work a lot, and the hours felt really long, and I felt very alone. I remember thinking, here I am, the baby is crying, it's dark outside, and there is actually no-one who really understand what I'm going through.

Social support from close family and friends were also recurrently emphasized with regards to well-being.

P11. In the beginning, when he had just been born I thought it would have been nice to be in Uganda, cause my sister in law had a little girl three days before he was born, and then the mother in law and aunts and sisters all came to pamper her and take care of her... but besides from that I'm glad I'm not in Uganda.

## The transition to motherhood

The 'postpartum-group' was often mentioned as an important arena where the women could talk, compare and get a sense of being normal. The postpartum-group is an informal group of new mothers initiated by the well-baby clinics. The main issue is networking and social support. The groups typically meet once a week, starting when the baby is approximately 8 weeks.

Surprisingly, several of the mothers reported a sense of disappointment in the level of support received at the well-baby clinics. The mothers were content with the practical facilities related to vaccination and monitoring of the baby's growth curve, and the ones who did not have any particular concerns were also quite content with the well-baby clinics. Mothers who approached the clinics with more profound, emotional issues, however, reported being met by professionals who focused almost exclusively on normalizing their feelings, and they thus got a feeling of not being taken seriously. P2. "I go there only when I have to... I feel I haven't gotten any help there, they haven't taken me seriously, and all they say is that 'this is normal'..."

## The omnipresent breastfeeding

Every interviewee, regardless of personal approach talked extensively about the importance of succeeding with breastfeeding. All but one felt that society, including professionals at the well-baby clinics, exerts an immense pressure with regards to breastfeeding, and that being a good mother requires that you breastfeed. In the hospitals it was communicated that if you get sore or have trouble, you are not doing it right. Many described how midwives at the hospital had given them a package of substitute to bring home, but with the clear message that it should only be used in extreme emergencies.

## The transition to motherhood

Several of the women reported having struggled a lot with breastfeeding during the first weeks and oftentimes months, and they described how they had spent the time between breastfeeding-sessions dreading the next time they would have to breastfeed. They particularly dreaded the nights, worrying whether they would be able to breastfeed, as they felt more fragile and alone at nighttime. Thus, failing or succeeding with breastfeeding appeared to be closely tied to well-being.

P9. The first month was really tough, plain and simple. The fact that breastfeeding was so hard affected everything else. Since I didn't manage to breastfeed properly I didn't want to go out and see people, and so I ended up sitting on the couch all day, without really doing anything.

## DISCUSSION

The goal of the present study was to gain insight into why some women find the transition of becoming a mother to be so emotionally taxing that they feel some level of depressed mood, while others feel mostly content after having a baby. Importantly, the overarching aim of the present study was to acquire information regarding women's characteristics and level of well-being so that we can learn what potential efforts can be made to enhance women's subjective well-being in the postpartum months, and perhaps prevent the development of depression.

Personal approach to motherhood and its relation to depressed mood & well-being

## The transition to motherhood

We identified two approaches these mothers employed in the postpartum period, which we in accordance with the women's own words described as 'relaxed' and 'controlled.'

Whether a mother was more relaxed or controlled greatly influenced how she had envisioned the birth and the postpartum period, and how she experienced it. For instance, women who took a more relaxed approach reported having found it difficult and of little importance to envision the birth experience as they did not know what to expect.

Moreover, if a 'relaxed' mother experienced that the postpartum period was different from what she expected it had little or no emotional consequence. Women who expressed a higher need for control, however, had typically planned and expected a natural birth and expressed enormous disappointment and depressed mood once (if) they had to perform a cesarean section. It appeared as though the birth was something they attempted to master. Research suggests that a marked discrepancy between expectations and experiences when it comes to birth can put women at risk for negative, emotional reactions (16). Moreover, it is well founded in the literature that a discrepancy between ideal and actual self can lead to emotional discomfort (17). Self-discrepancy theory suggests that one may reduce the discrepancy and thus the emotional discomfort by readjusting the ideal self (17). The present study seems to suggest, however, that women with a higher need for control have more stringent ideas concerning the 'ideal' way of mothering and they react with negative emotions when the ideal is not achieved. Moreover, they seem unable to adjust the ideal standard of a mother; hence the emotional discomfort remains. That is, a woman's personal approach may function as a moderator between unfulfilled expectations and well-being outcomes.



## The transition to motherhood

Self-efficacy, referring to a person's belief that he or she possesses the abilities to achieve a given goal, is inversely related to depression (18). Thus, a presumption in the present study was that mothers with a higher level of self-efficacy would likely show less depressive symptoms. Surprisingly, however, most mothers rarely talked of self-efficacy, but rather talked of actual mastery. Furthermore, a lack of mastery, such as the inability to 'master' the birth led to marked concern and decreased well-being among those who expressed a higher need for control. This is consistent with research suggesting that people with a higher level of perfectionism react more strongly and more negatively to personal failure (19). It is interesting to think that related to a focus on mastery is the importance of self-regulation and self-monitoring (20). Pyszczynski & Greenberg (21) have shown that constant self-monitoring combined with a failure to achieve a desired state can lead an individual into a pattern of constant self-focus and rumination, which in turn may intensify the negative affect (21). In line with their argument one might speculate whether these highly educated first-time mothers have had unrealistic expectations and goals in terms of mastering motherhood, and self-monitoring combined with a failure to achieve their desired goals have led to self-focus and negative affect.

Important themes with regards to depressed mood & well-being regardless of personal approach: social support and breastfeeding

Consistent with previous research (8, 22, 23, 5), social support was unanimously emphasized as an essential component in facilitating well-being. The presence of social support has been found to prevent the development of depression, in part by influencing how one copes with stress (24). In the present study, emotional and practical support

## The transition to motherhood

from the partner was consistently reported to be crucial, and several expressed a need for the partner to acknowledge and validate their feelings and concerns. The presence and practical help from close family was also repeatedly mentioned as important with regards to well-being.

Most of the women in the present study confirmed that the postpartum group was an important arena where they could talk about their concerns and where they got a sense of being normal, especially in the beginning of the postpartum period. It was often mentioned that social comparison was common in these groups, but most experienced this comparison as informative, normalizing and soothing. The importance of connecting with other mothers has been pointed out by Stern (2) who describes how new mothers in general show an increased interest for other mothers and seek their company. Their primary goal is not to receive practical support, but to be part of a group where the members have common experiences and share the same interests and needs. Although Stern's hypothesis is quite plausible, one could also argue that this appreciation for information and normalization within the postpartum groups is consistent with the desire for control expressed among several of the women. One might speculate that although comforting in times of uncertainty, this process of social comparison may in part both reflect and uphold a need for monitoring, which in turn may put certain women at risk for lower well-being as it may increase a level of stress.

A somewhat surprising finding was the discontentment often expressed when it came to the level of social support offered at the well-baby clinics. The clinics represent a unique and important venue where infants physical and mental health are evaluated regularly (8 times the first year), and parents can receive feedback and counseling free of charge at their own convenience. As the prevalence of PPD has appeared to be increasing

## The transition to motherhood

in Norway over the last decade (25, 26), many well-baby clinics have become more conscious and alert regarding PPD in new mothers. One third of the municipalities in Norway have recently started screening for depression by use of the Edinburgh postnatal depression scale (27) and offering counseling to women with high levels of depressive symptoms. Thus, it was disconcerting to learn that many of the women (regardless of personal approach) felt that the professionals focused exclusively on normalizing their feelings, and did thus not take them seriously when they approached them with their concerns. It appeared as though the staff failed to acknowledge the uniqueness of the individual, and they failed to remember that although painful and stressful experiences are normal in the postpartum period, they can nevertheless be extremely difficult for a new mother. Studies have found postpartum women with depressive symptoms to have a natural desire to connect with others for symptom normalization (28). The present findings, however, suggest that new mothers need something more than a sense of being normal when approaching professionals. From a preventative perspective, the present findings seem to suggest that it is important to facilitate social support, both on the societal level and the familial level. A central objective could be for health care workers to enlighten significant others of what the new mother perceive to be important social support for her and her baby. As new mothers seem to call for something more than normalization, health care workers may want to offer something more concrete in this sensitive time. Short time supportive counseling by trained public health nurses has shown significant and long-lasting reduction in depressive symptom (29), and group-based short term supportive counseling has also shown to be valuable (30).

## The transition to motherhood

Breastfeeding has been highly recommended in Norway for many years (31), and the World Health Organization (32) recommends breast milk as the sole source of nutrient for infants up to the age of 6 months. In Norway, 80% of the women breastfeed (totally or partly) their babies at 6 months (33). This is a very high prevalence compared to other Western countries (34). The women in the present study perceived that breastfeeding young infants is a strong normative value in the Norwegian society, and choosing not to breastfeed is abnormal. Several of the women explicitly stated that they felt healthcare workers and society communicate that in order to be a good mother one has to breastfeed.

Research suggests that there is a correlation between breastfeeding cessation and PPD (35, 36). These studies, however, are mostly based on questionnaires and have not inferred causality. Interestingly, contrary to suggestions put forward by previous researchers, the present study seems to suggest that although mothers felt frustrated, depressed or blue, they continued to try to breastfeed until they succeeded even though it compromised their subjective well-being. In fact, several reported that although they normally would deal with challenges in a more rational manner, they were not able to be rational when it came to breastfeeding. It seemed too important since it was so closely connected to being a good mother. One alarming finding in the present study was the fact that nobody talked about breastfeeding as something they enjoyed or appreciated. The women expressed either relief that they had been able to breastfeed without any trouble, or major frustration because of the difficulties associated with it. Breastfeeding is good for the infant both in terms of nutrition and attachment (37). However, it is unsettling that new mothers are not painted a more nuanced picture of the importance of breastfeeding as it can influence a mother's mental health, which in turn can effect her interaction with

## The transition to motherhood

the baby (37). Furthermore, the present study illustrated how women struggle with breastfeeding, yet the difficulties are rarely discussed in the open, leaving many new mothers feeling like failures and not good mothers if they do not manage to breastfeed. An important goal for health care workers could therefore be to present new mothers with a more nuanced picture of the importance of breastfeeding, as well as discussing more openly the struggles many new mothers experience when they initiate breastfeeding. This could perhaps minimize the pressure when it comes to breastfeeding, and perhaps help prevent depressive symptoms postpartum.

## The motherhood constellation and a positive holding environment

A woman's desire to be the best mother she can be, and the emotional turmoil associated with her wish to succeed as a mother, as expressed by the women in the present study, seem sensible when considering what Stern (2) refers to as the 'motherhood constellation'. He argues that the motherhood constellation is a phenomenon unique to western societies, and it represents a new and unique way for the new mother to organize herself. It involves new concerns; can she maintain the life and growth of her baby, can she assure the baby's psychological development, can she create a necessary support system, and finally, can she facilitate all these functions. Stern (2) argues that culture plays a major part in forming the motherhood constellation; that is, cultural factors shape what mothering should entail. In Norway, breastfeeding represents a fundamental cultural value. Hence, it is perhaps not surprising that conscientious, new mothers experience intense emotions with regards to breastfeeding. Stern (2) argues that our western culture values the maternal role, and the mother is in part evaluated as a person by her success in

## The transition to motherhood

the maternal role, which surely sheds some light on the mothers' recurrent focus on mastery in the present study. He further describes how it is expected that the father and others provide a supporting context in the initial phase; however, the ultimate responsibility lies with the mother. In fact, Stern (2) accentuates how family, society, and culture do not provide the new mother with the experience, training, or adequate support for her to manage her maternal role easily or well. Interestingly, the importance of high quality postpartum care for a woman and her child through available support is debated in a recent article by Norwegian researchers (38). They describe a current trend to increase the focus on the newborn baby's needs and the importance of breastfeeding, while at the same time reducing public postpartum care efforts directed towards the mother. Consistent with the present study, Eberhard-Gran et al. (38) suggest that a reduction in postpartum care may comprise a contributing factor in the increasing prevalence of PPD.

## LIMITATIONS AND FUTURE STUDIES

As in all qualitative research, a potential confounding variable in the present study is the influence of the interviewer on the respondents. As the interviewer was the same age and gender as the interviewees, it may have influenced the responses in different ways. For instance, the participants may have wished to come across in a socially desirable manner. Hence, the recurring focus on mastery. On the other hand, they may have felt comfortable talking to someone who could easily relate to their situation. As an effort to make the participants feel like 'experts' with regards to parenting, it was explicitly stated that the female interviewer did not have children. Although it was attempted to create an interview-guide with open-ended questions, the women may have perceived the context

## The transition to motherhood

as an opportunity to convey what they find troublesome. Moreover, although most of the themes implicitly involved the baby; the women rarely talked explicitly about the interaction between mother and child. This may be due to the fact that the poster stated that we wished to learn about the *mother's* good and less good experiences. As the present study was a qualitative study the focus was not on representativeness and generalizability, but rather to learn more about the broader theme of well-being and depressive symptoms in the postpartum period. In order to make more general inferences, one needs to do similar studies among different age groups and in more rural areas. Moreover, prospective, preventative studies that target expectations regarding the birth and postpartum period, social support and knowledge on breastfeeding are needed in order to explore whether such efforts can prevent depressive symptoms among new mothers.

## CONCLUSION AND IMPLICATIONS

Unfulfilled expectations and lack of mastery were repeatedly emphasized in the interviews; however, they were typically tied to depressive symptoms among the women who expressed a higher need for control. The present study found that succeeding with breastfeeding, and having emotional and practical support from partner and close family/friends to be unanimously important with regards to well-being and depressive symptoms during the early postpartum months.

Although the term 'good-enough-parenting' is well-known, the present study illustrate how there is a marked need to lessen the pressure on new mothers, particularly with regards to breastfeeding. Midwives and other health care professional have a

## The transition to motherhood

definite responsibility in this regard. As several of the interviewees pointed out, the professionals need to do more than to normalize the mothers' concern. They need to offer a positive holding environment that encourages women to talk and share, to sort out their experiences and feelings and clarify that there are numerous ways of being a good-enough mom. And perhaps most importantly, good enough is truly good enough.



## The transition to motherhood

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## The transition to motherhood

Table 1. Main themes and subthemes related to self-reported depressive symptoms and subjective well-being

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### Personal approach - 'controlled' versus 'relaxed'

- Need for control/mastery
- Preparations and expectations

### Social support

- Emotional and practical support
  - Support from partner
  - Family and friends
  - Postpartum group
  - Well-baby clinics

### Breastfeeding

- Managing breastfeeding and well-being
-

## The transition to motherhood

### Appendix

Main themes	Sub-themes	Quotes			
Controlled personal approach		P8. "I am a typical 'good-girl' who likes to do everything well, I get really stressed when things are out of control and I don't know how to deal with the situation"	P11. "I look forward to when he (the dad) is going to stay at home, maybe then he'll realize what it's like to be home all day. But then again I'm a bit nervous that he'll manage things better. Maybe he'll manage to clean the house and do the dishes and everything, like I didn't manage yesterday..."	P2. "We live in a culture that is so focused on mastering everything, and I think that goes for how to be a mom as well. What clothes should you use for the baby, there's so many things you should know, and there are so many ways you can do things, and within all areas there's always a way that is better...diapers, strollers, soothers, clothes...yes, in all areas it should preferably be the best, the best for the baby, you know pedagogically correct...there are so many areas where you can show others that you manage something or not."	
Relaxed personal approach		P4. "Our parents say, gee, you're so relaxed about everything. My thinking is that if we get scared, she'll get scared. So that ear is going to be fine, you'll see"			
	Control with regards to pregnancy and/or birth	P6. "The birth experience turned everything upside down. My biggest nightmare was if I had to do a c-section. Partly because I had read that natural birth is definitely best for the baby. I read so many things about avoiding c-section... you only do a c-section if it's an emergency. Also, I don't like operations. So it was really a nightmare for me, and I remember thinking, this isn't happening to me."			
	Relaxed approach to birth	P4. "Now, I'm really glad I knew as little as possible. There's something to be said about not knowing too much. Just knowing that this (giving birth) is a natural process, but not knowing exactly everything that can happen...cause you're can't really do anything about it anyways. I think there's a balance between knowing certain things, but not think about all the different options."	P12. "I didn't have any specific expectations to what the birth was going to be like.. I sort of thought, the worst thing that can happen is that it will hurt, and I can handle pain.. of course that's not the worst that can happen... but I figured it's going to hurt, but that's nothing to be afraid of. The people at the hospital are qualified, so..."	P7. "I had planned to make use of epidural, but everything happened so fast so it was suddenly too late. It was extremely painful, but when I had gone through this huge experience without suffering too much it was sort of fun as well. But yes, I was definitely open to the idea of painkillers; you can't decide these things for sure in advance. You have to play it by ear."	
	Preparation and control	P8. I prepared everything. I bought a lot online. I spent a lot of time doing research. I am a journalist, so I did research to find out what is best for the baby. You have all these theories about what it's going to be like, but in reality you have no clue. I had read about the birth and all that... but it stopped there. You think that the birth is going to be the worst part, and that once the baby is there it's going to be nothing but joy. But now I know that the birth is over in no time, and it's the following months with stitches, not managing to breastfeed, no sleep that last and last".			

## The transition to motherhood

	Expectations and controlled approach	P6. "I planned to have no plans...I planned to be outside a lot, go for walks, and not do anything else, sort of play it by ear, that was sort of the plan... but of course I had plans for how I would raise my baby. It was very like, I'm going to do this and that and my baby will be like this and that. For example, she will sleep in her own room. Of course, that didn't work out when I couldn't get up at night to breastfeed because of the scar (from the c-section)...I had had very specific ideas on how I would do things, and then she came along and I forgot what I had decided, and afterwards I thought, I wasn't supposed to do this..."	P2. "The most important thing I want to convey, is the feeling that it has been completely opposite of what I imagined, and that it's hard, if not impossible, to prepare yourself for how it's going to be.... You think you know how you're going to do things, I know this, I've read plenty, I feel I'm in control, and then this little creature comes along, and does not fit into the picture you have foreseen"	P8. "...and here he comes, and he's completely different from what I had imagined. Since I was a little girl I had pictured myself having a girl much like myself. Kind, amenable... But then you have this little bully, who is very outgoing and social, and who you wouldn't trade for anything, and who is a boy, which is great, but I didn't expect to have a boy... and you think that babies are compliant, that you can do what you want with them. But he has such a strong sense of will... things didn't turn out the way I had imagined. I don't think I had consciously envisioned what it was going to be like to be a mother, but I've had this idea about having a baby since I was very little...and this idea did not resemble reality at all, and so that disappointment combined with me being exhausted made it really hard"	P2. "Labor had to be induced, and that was disappointing to me... I had my mind set on... I really wanted a natural birth. I had looked forward to when the labor would start and everything, and that everything would be natural..."
	Me-time	P1. "The big transition for me was the whole me-time thing. Suddenly you're so tied down, especially when you're used to being so free...I think if you have a baby when you're older, like me, you may perhaps have more realistic expectations, but on the other hand you're so used to having a lot of me-time, so that might make the transition somewhat harder".			
	Realistic expectations	P11. "One of the most useful things I learned at this breastfeeding class before giving birth, and that I also read in some books, was that during the first weeks you're not supposed to do anything besides being at home, breastfeed and sleep. And that was exactly how it was when he was born"		P7. "At first I didn't think about it (the postpartum period) much... but as the due-date came closer I talked to a friend of mine who had had a really tough time when she had her baby. That's when I realized that having a baby can also be a bit negative. I started asking around, and friends told me that it's not all fun and games. You're tired all the time, and it's all time-consuming... And then... then I realized that ok, it can be really tough. But I think if I hadn't talked to her, then I would have had completely different expectations."	
Breast-feeding		P9. "Breastfeeding was really difficult... and at the hospital there was so much information, it was just too much. There was so much information about how you're supposed to breastfeed, and they had this mantra that if you get sore you're not doing it right. I got sore and so I didn't do it right, and they confirmed that I wasn't doing it correctly, but it wasn't easy to make it work. And that was really what made me feel sad and like a failure in the beginning... I wish I'd gotten less information, or more importantly, that somebody had explained it to me before the birth, before all the hormones were running wild".	P8. "I dreaded the darkness at night. Because I had to get up at night, and I didn't know if I'd be able to breastfeed, and nobody could help me. The uncertainty... will it work out this time?... is so much worse when it's dark.. Things became easier, and I felt better around the time when the breastfeeding was working out fine"	P10. "Of course, I understand the importance of breastfeeding, I do, but I've talked to several mothers who've said that they wished they had given more substitute, cause it's so stressful, and you...I often felt so down cause I didn't know how well the breastfeeding was going. So I totally understand those mothers who break down if they don't manage to breastfeed, cause it seems as though the thing is, if you don't breastfeed, then you're not a good mom"	P3. "It seems as though if you don't succeed with breastfeeding, you are not a good mother"

## The transition to motherhood

Social support	Practical support from partner	P10. "I think it would have been easier in the beginning if my husband had been more at home. Or if he hadn't been much at home, at least some practical help buying groceries and making dinner and that sort of thing"	P3. "...the whole sleeping thing...I feel he thinks that it's all my responsibility...you're the one breastfeeding so you're the one who has to get up at night. So he can just go back to bed, it's so easy for him. I've said that I wish he could offer to help, and perhaps suggest that I pump myself so that he can feed her one night"	P9. "My boyfriend was very good at like...facilitating so that I could go out for walks, or he would say, now you can just go outside or downtown for a bit, that is, he would try to make me think about something besides when I would breastfeed next. He was kind of a motivator. He would say, didn't they say it (the breastfeeding) would hurt less in a week? I'm sure it'll be better in a week. And then he did a lot of housework as well, cooking and cleaning and all that."	
	Emotional support	P3. "I feel sad when he doesn't support me when I'm worried, or respect that I'm concerned. He feels that I over-dramatize things, but I wish he would respect that this is what it feels like for me. Instead he oftentimes dismisses my concerns. I wish he would say... it might have been a bit hasty going down to the children's clinic, but I understand your need to check it out. That would be great, if he could say that."			
	Missing intimacy	P7. "I felt it was mostly me that was a bit stressed over not having sex, and that...that I was the one who found it a bit sad. I felt I was the one missing it the most, not him..."	P1. "Well he sort of saw breastfeeding as a turn-off, and sort of as her area, so now that I breastfeed less we have sort of started having sex again...I felt he was a bit stupid or foolish in that regard, cause I didn't mind the breastfeeding, but I had to respect how he felt."		
	Support from family/friends	P8. "I think for me...feelings or experiences one may have had with regards to one's own parents, that haven't been properly processed, they easily resurface once you're in this completely new and vulnerable situation, and it's like...all of these things that have a tendency to reappear, I think they may very well be a risk factor".	P7. "One of the things that has definitely helped me, and made me feel better, is the fact that I have had the opportunity to talk to good, close friends and have had a supportive family...that has backed me up"		
	Postpartum group - normalizing	P8. "In the beginning it was really nice to get a sense of confirmation from the other moms in the group. There were a lot of comparison, but...I don't know, it doesn't have to be all bad. You kind of want to know what your baby is like compared to the others. Is he advanced, is he falling behind, is he in the middle range?..."	P3. "It was great to be able to share experiences with the other moms in the group. It was very nice just...talking about other practical things too. We had a lot in common, and everyone was very honest and outspoken."		
	Support from health care centers	P3. "I wish I had been made aware of the fact that there are certain things I could do".			







A longitudinal study of postpartum depression

A longitudinal study of postpartum depression: Multilevel growth curve analyses of emotion regulation strategies, breastfeeding self-efficacy and social support

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## A longitudinal study of postpartum depression

### **Abstract**

**Purpose:** Postpartum depression (PPD) is a serious health issue affecting as many as 10-15% of postpartum women. This longitudinal study aimed to explore how psychological variables such as cognitive emotion regulation strategies, breastfeeding self-efficacy (BSE) and dimensions of social support predicted postpartum depressive symptoms (EPDS).

**Method:** The data were collected with web-based survey questionnaires between May 2008 and December 2009, in a sample of 737 new mothers. The same questionnaire was surveyed at three points in time: 6 weeks, 3 months, and 6 months postpartum. Data were analyzed using multilevel modelling (level 1: time points, level 2: person).

**Results:** Results showed that BSE, certain cognitive emotion regulation strategies, perceived available support, and need for support predicted the rate of postpartum depressive symptoms. Only breastfeeding self-efficacy predicted change in postpartum depressive symptoms.

**Conclusion:** This study illustrates the importance of psychological variables with regards to postpartum depressive symptoms. Implications for preventative efforts are discussed.

**Key words:** postpartum depression; breastfeeding self-efficacy; emotion regulation; social support; longitudinal

## Introduction

As many as 10-15% of new mothers experience severe emotional distress, frequently labelled *postpartum depression* (PPD) (Bloch, Rotenberg, Koren, & Klein, 2005; Brockington, 2004; O'Hara & Swain, 1996). The most common symptoms of PPD are tearfulness, feelings of hopelessness, inadequacy, guilt, inability to cope with and feel joy over the new baby, agitation and anxiety, loss of appetite, poor concentration and memory, sleep disturbances, fatigue, social isolation, and suicidal ideation (Robertson, Grace, Wallington, & Stewart, 2004). It strikes in a woman's life when she is expected to be as happy as can be, which obviously makes the experience of PPD particularly arduous. The most common screening-tool for PPD is the Edinburgh Postnatal Depression Scale (EPDS), which assesses depressive symptoms during the last 7 days (Cox, Holden, & Sagovsky, 1987). Mothers with EPDS scores above a defined cut point are often referred to as having PPD. The consequences of moderate to severe PPD symptoms can be serious for the mother, her child and family. Indeed, women who suffer from PPD are less capable of carrying out maternal duties, such as engaging in important developmental activities with the baby, like playing and talking, which may influence the child's cognitive, and socioemotional development (Goodman, Brogan, Lynch & Shielding, 1993), as well as the infant's attachment style (Bonari, Bennett, Einarson, & Koren, 2004). Fathers have an increased risk for depression when their partner is depressed (Lovestone & Kumar, 1993), and children of depressed fathers are at increased risk of behaviour problems (Ramchandani et al., 2005). The personal cost as well as the cost to society caused by PPD is enormous and more knowledge is needed about risk and protective factors to prevent serious effects of PPD.

Numerous studies have shown that there are certain factors that put women at elevated risk for PPD. A personal history of depression, family history of depression, negative life events, partner conflicts or low relationship satisfaction, low levels of social support and certain baby characteristics are all suggested to comprise potential risk factors (O'Hara & Swain, 1996; Beck, 2001). First-time mothers seem to be extra vulnerable for PPD (Munk et al., 2006). Other risk factors that are repeatedly identified are low self-esteem, and being single or teenage mother (Beck, 2001). Importantly, the risk of developing PPD increases with the number of risk factors present. These risk

## A longitudinal study of postpartum depression

factors for PPD overlap with risk factors for major depression except from the factors that are directly related to having a child. Since the symptoms also overlap to a great extent, it has been questioned whether PPD has its own unique origin (Brockington, 2004).

Irrespective of the answer, these risk factors explain only in part the development of PPD (Bloch et al., 2005). Hence, there is an urgent need to explore other potential factors that may put new mothers at an increased risk for PPD, and to develop a deeper understanding of some of the established risk factors. New knowledge about the relationship between these variables and PPD could potentially be targeted in efforts aimed at preventing PPD.

### **Emotion regulation strategies and postpartum depression**

The ways in which we regulate our emotions and deal with daily obstacles affect both our physical and mental health. Emotion regulation refers to individuals' attempt to "influence which emotions they have, when they have them, and how these emotions are experienced and expressed" (Gross, Richards, & John, 2006, p. 3). Most definitions reflect that individuals take action either to maintain or to alter the intensity of emotion, or to prolong or shorten the emotional experience (Larsen & Prizmic, 2004). Recent studies have found strong relationships between a person's tendency to use certain strategies and various emotional problems such as depression (Garnefski & Kraaij, 2006; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), generalized anxiety disorder (Mennin, Holoway, Fresco, Moore, & Heimberg, 2007), and eating disorders (Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Nine conceptually different cognitive emotion regulation strategies have been suggested: self-blame, other-blame, rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and planning (Garnefski Kraaij & Spinhoven, 2001). In general, previous studies suggest that while cognitive strategies such as rumination, self-blame and catastrophizing are positively associated with psychopathology (Aldao & Nolen-Hoeksema, 2010; Garnefski et al., 2001), the use of positive reappraisal and problem solving seem to make people less vulnerable to emotional problems (Aldao & Nolen-Hoeksema, 2010). As becoming a mother likely elicits an array of positive and negative emotions, a woman's habitual tendency to use different emotion regulation strategies may influence her level of well-being postpartum. If so, cognitive emotion regulation strategies could be an important

## A longitudinal study of postpartum depression

target for tailored preventative efforts of PPD. The relationship between emotion regulation strategies and PPD has not been explored, and is thus warranted.

### **Social support**

A considerable amount of research demonstrates how social support relates to depression in general, but also how it relates to PPD specifically (Howell, Mora, DiBonaventura & Leventhal, 2009; Haslam, Pakenham & Smith, 2006). Indeed, meta-analyses suggest low level of social support to be one of the strongest predictors of PPD (Beck, 1996, 2001; O'Hara & Swain, 1996). The presence of social support has been found to buffer against depression, in part by influencing how one copes with stress (Schwarzer & Knoll, 2007).

In addition to the common distinction made between emotional, instrumental and informational social support (Collins, Dunkel-Schetter, Lobel & Scrimshaw, 1993; Schaefer, Coyne & Lazarus, 1981), a distinction can also be made between perceived available support and actual support received. While perceived available support says something about the expectation of what will happen in the future, actual received support is a retrospective evaluation of support already received (Schwarzer & Knoll, 2007; Schwarzer & Leppin, 1991). Perceived available support is considered to be an entirely cognitive process, which in turn makes it more stable, universal, and trait-like than actual received support which is more of an observation of received support (Dunkel-Schetter & Bennett, 1990; Lakey & Drew, 1997). These two constructs have been found to correlate poorly, suggesting perhaps that one has a tendency to under- or overestimate the availability of one's social resources (Collins et al., 1993; Schwarzer & Knoll, 2007). While numerous studies have examined the link between social support and PPD, the unique contributions of particular aspects of social support with regards to PPD are unclear. Hence, a purpose of the present study was to assess how various dimensions of social support relate to PPD.

### **Breastfeeding, breastfeeding self-efficacy and postpartum depression**

The World Health Organization has recommended breastmilk to be the sole source of nutrient for infants up to the age of 6 months (WHO, 2001). Accordingly, in Norway, where the current study took place, breastfeeding is highly recommended and valued by

the Governmental health authorities. In fact, 99% of Norwegian mothers initiate breastfeeding after birth (Haggkvist et al., 2010) and 80% breastfeed (totally or partly) their babies at 6 months post partum (Statistics Norway, 2003). This is a very high prevalence compared to other Western countries (Callen & Pinelli, 2004) and full paid maternity leave for about a year is probably an important factor in explaining the high prevalence in Norway. The most common reason why mothers cease to breastfeed is the fact that they do not produce enough milk. Other reasons why mothers cease to breastfeed are negative attitudes towards breastfeeding and a low sense of breastfeeding self-efficacy (Blyth, Creedy, Dennis, Moyle, Pratt & Vries, 2002). Breastfeeding self-efficacy refers to a mother's belief that she possesses the abilities to breastfeed her infant (Dennis & Faux, 1999). Studies suggest that feeling sad in the perinatal period are associated with breastfeeding difficulties (Dennis, 2002; Eberhard-Gran & Slinning, 2007). This is in accordance with a recent Norwegian large scale study which found that both a low sense of general self-efficacy and negative affect during pregnancy predicted difficulty with breastfeeding (Yström, Niegel, Klepp, & Vollrath, 2008). A similar study in the United States found that depressive symptoms during pregnancy predicted who would cease to breastfeed within the first month (Pippins, Brawarsky, Jackson, Fuentes-Afflick, & Haas, 2006). In their study, Misri, Sinclair and Kuan (1997) explored the relation between PPD and the termination of breastfeeding. The majority (83 %) of mothers developed depressive symptoms before they ceased to breastfeed. Moreover, the mothers who did not manage to continue breastfeeding perceived themselves as less capable of taking care of their child.

Since breastfeeding is highly recommended and valued in Norway, a high level of breastfeeding self-efficacy may be closely tied to the feeling of being a successful mother. While some studies on PPD have examined the effect of general self-efficacy (Howell, Mora, & Leventhal, 2006) and maternal self-efficacy on PPD (Coleman & Karraker, 1997; Cutrona & Troutman, 1986), there are to our knowledge, only two studies (Dai & Dennis, 2003; Dennis, 2003) that have examined how self-efficacy pertaining to breastfeeding relates to PPD. Their primary aim, however, was to assess the validity of the breastfeeding self-efficacy scale (BSES), rather than discuss the relationship between these variables. A reduced sense of self-efficacy is assumed to



## A longitudinal study of postpartum depression

function as both a cause and effect of depression, presumably because self-efficacy influences how one feels, but how one feels does also influence one's sense of self-efficacy (Bandura, 1994). Consequently, it may be the case that women who do not feel efficacious when it comes to breastfeeding experience feelings of failure and lowered mood, and hence experience increased risk for PPD.

In sum, the primary aim of the present study was to assess in a multilevel model how variations in symptoms of PPD can be explained by the use of different emotion regulation strategies, different aspects of social support, and breastfeeding self-efficacy. More specifically, we expected that rumination, self-blame and catastrophizing would be positively associated with PPD, and positive reappraisal and problem solving would relate negatively to PPD. In terms of social support, we wanted to explore whether there are certain dimensions of social support that are more important with regards to PPD. Finally, we hypothesized that a high level of breastfeeding self-efficacy would be associated with less postpartum depressive symptoms.

## Method

### Procedure

Postpartum women who gave birth at Oslo University Hospital between May 2008 and December 2009 were invited to take part in the study. In order to be eligible to participate one had to be at least 18 years of age, able to read and write Norwegian, have access to the internet (and have an electronic mailing account), and the baby could not be in the intensive care unit. Nurses and midwives informed and invited the new mothers to participate in the study prior to leaving the hospital. The postpartum women were informed that participation was voluntary and anonymous, and that they could withdraw from the study at any time. The 1150 women who consented to being contacted about the study (by signing their name and electronic mailing address on the consent form) were given an identification number and were contacted by electronic mail approximately 5-6 weeks after giving birth. In the electronic mail they were reminded of their identification number and they were invited to fill out a web-based survey-questionnaire. If participants did not respond to the electronic mail over the course of a week (i.e. did not complete the

## A longitudinal study of postpartum depression

questionnaire), they received one reminder per electronic mail. Only participants who completed the first questionnaire (6 weeks postpartum) were invited to complete a follow-up questionnaire 3 months postpartum, and similarly, only participants who completed the 3 months postpartum follow-up were invited to complete a final follow-up at 6 months postpartum. The study was approved by the Regional Committee of Medical Research Ethics in South-Eastern Norway.

Table 1 describes the participants by educational level, marital status, and parity. 1150 new mothers were contacted and 737 (64% response rate) completed the first electronic survey questionnaire, 481 completed the second questionnaire (65 % response rate), and 344 postpartum women completed all three questionnaires (71.5% response rate). The mothers' age ranged from 21 to 45 ( $M$ =median age=32,  $SD$ =4.32). In order to make the analyses across the three time points most comparable, the analyses are based on a panel design of 344. The women who dropped out of the study did not differ significantly from the study sample on sociodemographic characteristics.

INSERT TABLE 1 HERE

### Measures

The survey questionnaires comprised previously validated scales that assessed symptoms of PPD, emotion regulation strategies, breastfeeding self-efficacy, and social support, as well as questions assessing demographics. The same scales (except demographics) were assessed on all three time points.

Postpartum depression was measured by The *Edinburgh Postnatal Depression Scale* (EPDS; Cox, Holden, & Sagovsky, 1987). This is a 10-item self-report instrument that assesses postpartum depressive symptomatology during the last 7 days. Items are rated on a 4-point scale from 0 to 3 to produce a summative score ranging from 0-30, with higher scores indicating elevated risk for postpartum depression. The EPDS is the most extensively applied measure of postpartum depression (Boyd, Le, & Somberg, 2005). This scale was developed to assess postpartum depression more specifically as general measures of depression have been found to be inadequate. The unique quality of the EPDS compared to other measures of depression is that it does not assess depression

## A longitudinal study of postpartum depression

based on symptoms that are common to largely all new mothers, such as loss of energy, feeling tired, changes in appetite and sexual drive. The EPDS has been found to correlate highly with other well-established measures of depression (Harris, Huckle, Thomas, Johns & Fung, 1989; Eberhard-Gran, Eskild, Tambs, Schei & Opjordsmoen, 2001). A Norwegian translation of the EPDS has been validated on two Norwegian samples (Berle, Aarre, Mykletun, Dahl & Holsten, 2003; Eberhard-Gran et al., 2001). Cox (1987) originally recommended a cut-off score of  $\geq 12$  as an indication of depression, however, a cut-off score of  $\geq 10$  has been recommended for community-based screening and has been shown to have high sensitivity, specificity, and predictive power for postpartum depressive symptomatology. Thus, a cut-off score of  $\geq 10$  was used in the present study. An alpha of .82 was calculated.

The **Cognitive Emotion Regulation Questionnaire** (CERQ; Garnefski & Kraaij, 2006) is an 18-item scale that was developed both on a theoretical and empirical basis and measures a total of nine different cognitive coping strategies. Two items measure each cognitive emotion regulation strategy. Participants rate their agreement with the statements on a five-point scale. The scale assesses the extent to which the person - '(nearly) never' (1), 'sometimes' (2), 'regularly' (3), 'often' (4) or '(nearly) always' (5) - makes use of a certain cognitive coping strategy. The different cognitive strategies are: *Blaming Yourself*, referring to thoughts in which you hold yourself responsible for what happened to you, *Accepting*, referring to thoughts where you resign yourself to what has taken place, *Ruminating*, referring to thinking about the feelings and thoughts associated with the negative event, *Concentrating on other, positive aspects*, referring to thinking about other, pleasant things instead of the event in question, *Concentrating on Planning*, or thinking what steps must be taken to cope with the event, *Positive Reinterpretation*, or giving positive significance to the event in terms of personal growth, *Putting into perspective*, or saying that worse things happen in the world, *Catastrophizing*, referring to constantly recurring thoughts about how terrible the event was and *Blaming Others*, referring to thoughts in which you hold other people responsible for what happened to you (Garnefski et al., 2001).

The **Breastfeeding Self-Efficacy Scale** (BSES-SF; Dennis 2003) is a 14-item scale used to assess breastfeeding self-efficacy. All items are preceded by the phrase "I

can always” and anchored with a 5-point Likert-type scale where 1 indicates *not at all confident* and 5 indicates *always confident*. As recommended by Bandura (1977), all items are presented positively, and scores are summed to produce a range from 14 to 70, with high scores indicating high level of breastfeeding self-efficacy. A sample item includes: I can always... “Ensure that my baby is properly latched on for the whole feeding.” The total score can be used to quantify the level of a mother’s breastfeeding self-efficacy and the scores of individual items can be used to diagnose specific areas where a mother lacks self-efficacy and requires targeted intervention (i.e. individualize confidence-building strategies) (Dennis, 2002). This tool has been psychometrically tested in a number of studies and demonstrates good reliability and validity (Dennis & Faux, 1999). Independent researchers translated and back-translated the scale into Norwegian for the present project. The present study calculated an internal consistency reliability coefficient of .94.

The **Berlin Social Support Scales** (BSSS, Schwarzer & Schulz, 2000) were developed based on theoretical considerations and reviews of established measurement instruments for social support. The multidimensional approach of measuring social support is a unique feature that distinguishes this inventory from other questionnaires. BSSS consists of 32 items divided on 4 subscales; perceived available support (PAS, 8 items), received support (RS, 15 items), need for support (NS, 4 items), and support seeking (SS, 5 items) that measure both cognitive and behavioral aspects of social support. The answering format is the same for all subscales: Participants rate their agreement with the statements on a four-point scale. Possible endorsements are strongly disagree (1), somewhat disagree (2), somewhat agree (3) and strongly agree (4). Scale scores are obtained either by adding up item responses (sum scores) or by generating the scale mean score. In the present study, alphas were respectively calculated to be .88, .84, .61, and .81.

### **Missing data**

Only participants with valid EPDS scores on all three measurement occasions were included in the analysis ( $N = 344$ ). Some of these participants had missing values on the Breastfeeding self-efficacy scale (BSES) on occasion 2 (9.2%) and occasion 3 (16.2%).

Missing values on the BSES were replaced only for participant who had a valid score on BSES on the previous occasion, using linear regression analysis with previous BSES score as predictor. All analyses presented in the results section were carried out with and without replaced missing values on the BSES. As there were found no substantial differences in results between the two main analyses, only the results based upon replaced missing values on the BSES are presented in the results section.

### **Statistical analyses**

To test whether variation in PPD (EPDS) could be explained by the predictors in the present study, multilevel modelling (MLM) was employed. MLM is advantageous with this kind of data in which repeated measurement occasions (level 1) are nested within participants (level 2) (Singer & Willett, 2003). This is because MLM accounts for dependence of residuals due to covariance between the levels in the data. Ignoring such effects gives biased estimates of standard error, which could ultimately lead to wrong inferences about the effects in the data.

Using MLM also has the advantages of modelling both *fixed effects* and *random effects*, which makes it possible to model individual differences in change/growth over time. Fixed effects refers to estimates where only one intercept (e.g. the initial level of EPDS) and one slope (e.g. for change over time in EPDS) is fitted to the data. Related to the present study, this means that both the initial level of EPDS and the rate of change over time in EPDS are modelled to be equal for all participants. However, individual differences in both intercepts and slopes can be modelled through two types of random effects: (1) In the *random intercept model*, the intercept (in this case the initial status of EPDS) is allowed to vary across participants; and (2) In the *random coefficient model*, the slope of the regression line (e.g. the change over time in EPDS) is allowed to vary between participants. This makes it possible to examine whether there are systematic individual differences in change/growth over time (in EPDS). When both types of random effects are modelled, this makes it possible to test whether the initial status/scores on the dependent variable (EPDS) is related to change in the dependent variable (EPDS) over time, represented by the covariance between the variance in intercepts and the variance in slopes between participants. This makes it possible to examine whether e.g.

participants who initially have a high score on EPDS change more over time compared to others.

Four models were tested. First, a “null model” estimating sources of variance in EPDS scores at the occasion level (within participants) and at the participant level (between participants). This model is used as a baseline model for deciding whether the fit of the model to the data improves and the variance at level 1 and level 2 drops when additional fixed and random effects of predictors are entered in the model. In Model 2, the development in EPDS-scores over time was modelled using time of measurement (units in months) as a predictor (Time). Both fixed and random effects of Time were modelled. In Model 3, Breastfeeding Self-Efficacy, the Berlin Social Support Scales and Cognitive Emotion Regulation Strategies were included as level 1 predictors of EPDS scores. All predictors were grand mean centered before they were included in the analysis to aid the interpretation of the results. In Model 4, interaction terms between the predictors in model 3 and Time were included in order to explain variation between participants in the development in EPDS scores over time.

The overall fit of the different models can be evaluated using the -2loglikelihood statistics, the lower the value, the better the fit of the model to the data (Hox, 2003). Comparison of nested models can be done through difference in -2loglikelihood over the difference in degrees of freedom using an ordinary Chi-square distribution. A significant difference between two nested models indicates that the model with the lowest value fits better to the data.

## Results

As presented in Table 2, the average EPDS score was highest 1.5 months postpartum ( $M = 5.82$ ), and was about one point lower at 3 months postpartum. There were only trivial differences between mean EPDS scores at 3 and 6 months. Pairwise comparisons with Bonferroni correction showed that EPDS scores were significantly higher at 1.5 months compared to 3 months postpartum ( $p < .001$ ), and 6 months postpartum ( $p < .001$ ), while there was no significant change in EPDS scores from 3 months to 6 months postpartum. This suggests a non-linear development in EPDS-scores over time, i.e. the main drop in EPDS-scores occurred in the period between 1.5 and 3 months after giving birth.

INSERT TABLE 2 HERE

To predict the level and development of EPDS scores over time, MLM was applied (Table 3). The level 1 units were the three times for measurement, nested within 344 individuals (level 2 units). First, the development in EPDS-scores over time was modelled using time of measurement (in months) as a predictor (Model 2). The Time-variable was centered at 1.5 months postpartum, meaning occasion 1 had the value 0, occasion 2 the value 1.5, and occasion 3 the value 4.5. This means that the intercept in Model 2 equals the mean score at 1.5 months postpartum (5.82). Initial exploratory analyses showed that the non-linear development in EPDS scores over time described above was best accounted for through including both a linear term and a quadratic term for Time in the multilevel model (both terms are fixed effects). The negative sign of the linear term followed by the positive sign of the quadratic term means that the EPDS-scores decline during the first months, and then the decline stops.

INSERT TABLE 3 HERE

To study individual differences in the development in EPDS scores over time, three random effects were included in Model 2, one for individual variance in intercept (i.e. differences in EPDS-scores 1.5 months postpartum), one for individual variance in the slope for Time (i.e. individual differences in development in EPDS over time), and one for the covariance between the variance in intercept and the variance in slope for Time. The latter makes it possible to examine whether initial status of EPDS (i.e. the score on EPDS 1.5 months postpartum) is related to change of EPDS scores over time.

The intercept was the only random effect found to be significant in Model 2. This implies that there are systematic differences between mothers in their EPDS scores at 1.5 months postpartum. As the other random effects were non-significant, this suggests that the (fixed effect) non-linear development in EPDS-scores over time is quite descriptive for the whole sample, and furthermore that initial status of EPDS is not related to change

in EPDS over time. In total, Model 2 explained 13.2 % of the variance in EPDS-scores on the occasion level (i.e. within individuals).

In Model 3, Breastfeeding Self-Efficacy, the Berlin Social Support Scales and Cognitive Emotion Regulation Strategies were included as level 1 predictors. The inclusion of these predictors improved the fit of the model to the data, as demonstrated by the relative large and significant reduction in  $-2\log\text{likelihood}$  value and AIC compared to Model 2. Further, Model 3 explained 24.9 % of the variance at level 1 and 37 % of the variance at level 2 (i.e. differences in EPDS scores among the participants).

The effects of the predictors demonstrate how the scores of the predictors are related to EPDS scores at the same time of measurement. The results show that high levels of Breastfeeding Self-Efficacy bore a significant negative relation with EPDS total scores at all points in time, that is, mothers with high breastfeeding self-efficacy tend to have low scores on EPDS at all points in time. Two of the four social support scales were significantly related to the rate of EPDS scores; perceived available support and need for support. The relationships were in the expected direction, high perceived available support was related to low symptoms of postpartum depression. High need for support was on the other hand related to high depression scores. Cognitive emotion regulation strategies were related with EPDS total scores as expected from theory. The strategies of ruminating, blaming oneself, and catastrophizing were all significantly related to higher levels of depressive symptoms, while using the strategies of positive reappraisal and concentrating on planning predicted lower postpartum depression scores.

In Model 3, the random effect for the slope of Time was significant, meaning that there were systematic individual differences in development of EPDS over time after the effect of the predictors had been controlled for. In order to try to explain the variation in development in EPDS scores over time, interaction terms between Time and the different predictors were constructed. Only one significant interaction effect was found, between Time and Breastfeeding Self-Efficacy (Model 4). The inclusion of this interaction effect made the random effect for the slope for Time nonsignificant, but gave only a marginal improvement of the fit of the model to the data ( $R^2$  –level 2 increased with 0.7 %). The negative sign of the interaction effect demonstrated that mothers scoring high on breastfeeding self-efficacy at 1.5 months postpartum had less decrease in EDPS over time



## A longitudinal study of postpartum depression

compared to those scoring low on breastfeeding self-efficacy. The inclusion of this interaction effect made the random effect for the slope of Time nonsignificant, meaning that there were no systematic individual differences in change in EPDS scores over time left. Thus, the lack of other significant interaction effects between the predictors and Time in Model 4 is not surprising since there were no systematic variance in slope of Time left to be explained.

The multilevel analyses were repeated with sociodemographic variables included (age, education and parity). No significant effects of the sociodemographic variables were found, and only trivial differences in parameter estimates compared to those presented in Table 3 were found.

### **Discussion**

The aim of the present study was to explore in a longitudinal design how the use of emotion regulation strategies, breastfeeding self-efficacy and various dimensions of social support related to postpartum depressive symptoms at 6 weeks, 3 months, and 6 months postpartum. Analyses which appropriately accommodated the nested structure of the longitudinal data encompassed two levels: measurement time and participants.

#### **Predicting the occurrence of postpartum depression**

The habitual use of rumination, self-blame and catastrophizing have been found to be associated with psychopathology, and positive reappraisal and planning have been found to make people less vulnerable to emotional problems (Aldao & Nolen-Hoeksema, 2010; Garnefski et al., 2001). Research findings indicate that the symptoms of PPD mostly overlap with symptoms of depression, suggesting a similar etiology (Brockington, 2004). Thus it was hypothesized that a pattern similar to previous findings on depression would emerge between emotion regulation strategies and PPD. This is exactly what we found. While women who scored higher on the use of self-blame, rumination and catastrophizing scored higher on postpartum depressive symptoms at all three time points, women who tended to use more positive reappraisal and planning scored lower on measures of PPD. Interestingly, research suggests that a person's habitual use of emotion regulation strategies can be modified (Campbell-Sills & Barlow, in Gross, 2007). This

## A longitudinal study of postpartum depression

demonstrates that cognitive emotion regulations strategies should have an important and central place in research aimed at explaining mental health problems. As with depression (Campbell-Sills & Barlow, in Gross, 2007), a potential target for intervention could therefore be to educate new mothers of alternative ways to cope with negative experiences in the postpartum months.

As hypothesized, the present study found that women with a higher level of breastfeeding self-efficacy (BSE) exhibited less postpartum depressive symptoms on all three time points. BSE represents a relatively under-researched risk factor for the development of PPD. Most studies have hitherto focused on breastfeeding and how it relates to depressive symptoms both antenatally and postpartum (Pippins et al., 2006; Ystrøm et al., 2008). In the present study, the focus was on BSE, rather than the actual act of breastfeeding. BSE has previously been found to be an important predictor of breastfeeding, and it is also predictive of whether mothers continue to breastfeed for a long time (Dennis, 2003). There are only two previous studies that report on the relation between BSE and EPDS (Dai & Dennis, 2003; Dennis, 2003), but they do not put forward a suggestion as to the causal direction of the relationship between BSE and EPDS (Dennis, 2003). The present findings suggest that one way of influencing postpartum depressive symptoms could be by increasing a woman's sense of self-efficacy when it comes to breastfeeding.

As far as social support was concerned, need for support and perceived available support emerged as important predictors of postpartum depressive symptoms. Specifically, women with a higher need for support exhibited significantly more symptoms of PPD. It is possible that a higher need for support reflects a higher degree of uncertainty, which may constitute a vulnerability for PPD. Women who perceived that they had a higher level of available support scored significantly lower on measures of PPD, which may imply that it is the feeling of not being alone that is crucial when becoming a mother. This is in accordance with previous research that demonstrates how a sense of a strong social network and the ability to count on others make up the fundamental protective elements of social support (Cutrona & Troutman, 1986). Stern (1998) suggests that new mothers show an increased interest for other mothers and seek their company. Their primary goal is not to receive practical support, but to be part of a

## A longitudinal study of postpartum depression

group where the members have common experiences and share the same interests and needs. Stern (1998) also posits that western, postindustrial societies do not provide the new mother with the training or adequate support for her to execute her maternal role alone easily or well. Interestingly, the importance of high quality postpartum care for women through available support is debated in a recent report by Norwegian researchers (Eberhard-Gran, Garthus-Niegel, Garthus-Niegel & Eskild, 2010). They describe a current trend to increase the focus on the newborn baby's needs and the importance of breastfeeding, while at the same time reducing care efforts directed towards the mother. Consistent with the importance of PAS in the present study, Eberhard-Gran et al. (2010) suggest that a reduction in postpartum care may comprise a contributing factor in the increasing prevalence of PPD.

### **Predicting change in postpartum depression**

At 6 weeks postpartum, 15% of the women in the present study obtained a score of 10 or higher on the Edinburgh postnatal depression scale, indicating them to be at risk of clinical depression. Although PPD scores decreased over time, the significant change in mean scores occurred from 6 weeks to 3 months, while mean scores did not change from 3 months to 6 months. Independent of depression score at 6 weeks, analyses showed that the non-linear development in depression scores over time were similar between participants. Analyses showed that the change in PPD score was predicted by level of breastfeeding self-efficacy. Interestingly, those who scored higher on breastfeeding self-efficacy at 6 weeks tended to show a slighter decrease in depressive symptoms compared to those who scored lower on the breastfeeding self-efficacy scale. This might seem counterintuitive, however one possible explanation could be that the mothers who scored lower on breastfeeding self-efficacy might have a greater potential for change. Also, it is important to note that the mothers who scored higher on breastfeeding self-efficacy scored lower on depressive symptoms across all time points. That is, breastfeeding self-efficacy is good to have. Social support and the use of different emotion regulation strategies did not predict change in depression over time. As already noted, the lack of other significant interaction effects is not surprising as there were no systematic variance in slope of Time left to be explained.

## **Conclusion**

Health care workers aim to identify and treat depressive symptoms in new mothers at an early stage; however it is often difficult to predict who are at risk (Horowitz & Goodman, 2005). The present study found emotion regulation strategies, breastfeeding self-efficacy, need for support and perceived support to be associated with postpartum depressive symptoms, suggesting that these factors are important to pay attention to when attempting to prevent PPD. As the use of rumination, self-blame and catastrophizing was found to be associated with higher levels of PPD, health care workers may seek to map out a mothers use of strategies and equip a vulnerable mother with more adaptive emotion regulation strategies, such as positive reappraisal and planning. Breastfeeding is practically considered normative in Norway, and the present study suggests that enhancing a new mothers feeling of breastfeeding self-efficacy could be important in attempts to prevent PPD. The present study also highlights the importance of measuring various dimensions of social support in order to better grasp what aspect of social support that is essential to mothers with depressive symptoms postpartum. It seems apparent that the perception of support is highly relevant with regards to depressive symptoms, and should therefore be considered when attempting to prevent the development of PPD. An intervention would likely benefit from including the woman's family and social network, and one of the main aims could be to enlighten significant others of what the new mother perceive to be important social support for her and her baby.

## **Limitations**

The sample was recruited from Oslo University Hospital in Oslo, and was not representative for the Norwegian population as a whole. Additionally, the sample is biased in terms of educational level (ca. 85% have completed a university degree), which could potentially have influenced the findings. Also, one might question if there is a selection bias in terms of the study being more appealing to women who feel that the study is relevant to them, in the sense that they have experienced negative emotions and depressive thoughts and feelings.

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# A longitudinal study of postpartum depression

*Table 1. demographic description of the sample*

Parity	Education				Marital status				
	Elementary	High-school	Bachelor	Master	Married	Common-law	Single	1	2
3+									
n	4	50	146	144	156	183	5	223	97
%	1,2	14,5	42	41,7	45,2	53,2	1,5	64,6	28,2

Note: N=344

# A longitudinal study of postpartum depression

Table 2. Repeated measures ANOVA for change in EPDS over time ( $N = 344$ )

	Mean (SD)	Pct. with score $\geq$
		10
1.5 Months	5.82 (4.02)	15.1 %
postpartum		
3 Months	4.77 (4.20)	11.6 %
postpartum		
6 Months	4.74 (4.32)	14.2 %
postpartum		
$F(2, 686) = 18.23 \ p < .001$		

## A longitudinal study of postpartum depression

*Table 3. Predictors of the level and change of postpartum depression scores at 1.5, 3 and 6 months after giving birth. Results from multilevel modelling. Unstandardized regression coefficients listed with standard errors in parenthesis.*

	Model 1 Intercept only	Model 2 +Change over time in EPDS	Model 3 +Predictors of the level of EPDS	Model 4 +Predictors of change in EPDS
	<i>b</i> (s.e.)	<i>b</i> (s.e.)	<i>B</i> (s.e.)	<i>b</i> (s.e.)
<b>Fixed effects</b>				
Intercept	5.11 (0.19) ***	5.82 (0.22) ***	5.6 (0.19) ***	5.5 (0.19) ***
<i>Time</i>				
Linear (centered at 1.5 months)		-0.95 (0.19) ***	-0.63 (0.18) ***	-0.60 (0.18) ***
Quadratic		0.15 (0.04) **	0.09 (0.04) **	0.09 (0.04) **
Breastfeeding self-efficacy <sup>a</sup> (BSE)			-0.08 (0.01) ***	-0.10 (0.01) ***
<i>Berlin social support scales</i>				
Perceived available support <sup>a</sup>			-0.32 (0.05) ***	-0.33 (0.05) ***
Seeking support <sup>a</sup>			-0.06 (0.05)	-0.06 (0.05)
Received support <sup>a</sup>			-0.02 (0.02)	-0.02 (0.02)
Need for support <sup>a</sup>			0.26 (0.07) ***	0.26 (0.07) ***
<i>Cognitive emotion regulation scales</i>				
Ruminating <sup>a</sup>			0.13 (0.06) *	0.13 (0.06) *
Positive reinterpret <sup>a</sup>			-0.20 (0.07) **	-0.21 (0.07) **
Blaming oneself <sup>a</sup>			0.49 (0.08) ***	0.48 (0.08) ***
Catastrophising <sup>a</sup>			0.23 (0.08) **	0.23 (0.08) **
Concentrating on planning <sup>a</sup>			-0.15 (0.07) *	-0.16 (0.07) *
<i>Time x BSE</i>				-0.01 (0.005 * )
<b>Random effects</b>				
Level 1 (occasions within individuals)	7.40 (0.41) ***	6.42 (0.50) ***	5.56 (0.45) ***	5.55 (0.45) ***
Level 2 (intercepts between participants)	10.02 (0.98) ***	10.61 (1.24) ***	6.31 (0.87) ***	6.24 (0.87) ***
Random slope for Time (variance in change over time)		0.11 (0.08)	0.15 (0.07) *	0.13 (0.07)
Cov. intercept and slope for Time (Cov. initial status and change over time)		-0.16 (0.23)	-0.32 (0.19)	-0.26 (0.19)
<b>Model fit</b>				
R <sup>2</sup> level 1 (Occasion level)		13.3%	24.9%	25.0%
R <sup>2</sup> level 2 (Participant level)		-	37.0%	37.7%
-2 loglikelihood ( $\chi^2$ )	5272.5	5241.0*** <sup>b</sup>	5033.2*** <sup>b</sup>	5036.9
Akaike's Information Criterion (AIC)	5276.5	5249.0	5041.2	5044.9

<sup>a</sup> The predictors are mean centered, <sup>b</sup> Significance of difference from previous model

\* p < .05, \*\* p < .01, \*\*\* p < .001

## **APPENDIX I**

### Survey questionnaire



**Briefing:****Første del av forskningsprosjektet Barseldepresjon, hvem rammes og kan intervensjonsprogram hjelpe?**

Velkommen til forskningsundersøkelsen "Barseldepresjon, hvem rammes og kan intervensjonsprogram hjelpe?". Dersom du skulle ha mistet det informasjonsskrivet du fikk kopi av på barselavdelingen, kan du lese dette ved å klikke [her](#).

Etter at du har fylt ut dette første spørreskjemaet, vil vi kontakte deg igjen ca 3 og 6 mnd etter fødselen med nytt spørreskjema. Dersom du ikke fyller ut dette første spørreskjemaet, vil vi minne deg på studien i en ny e-post, og evt. i et brev til din hjemmeadresse. Dette fordi vi vet at det ikke er uvanlig å skifte e-post adresse, og fordi vi vil sikre at alle kvinner som samtykket til å delta i studien etter fødselen, virkelig har fått tilbud om å fylle ut skjemaene.

Det er frivillig å delta i denne studien. Du kan når som helst trekke deg ved for eksempel å sende e-post til prosjektleder, eller la være å svare på spørreskjemaene.

Etter endt studie vil vi sende deg (per e-post) et kort sammendrag av resultatene for hele studien!

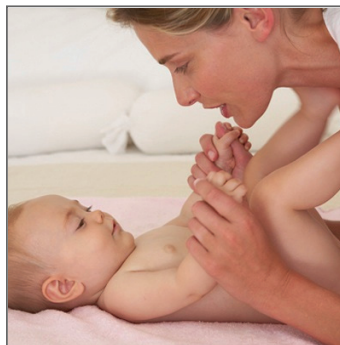
Når du har aktivert spørreskjemaet er det viktig at du fullfører uten å lukke nettleseren da du ikke kan fortsette på undersøkelsen senere. For å registrere skjemaet som innlevert må du klikke "Avslutt" på slutten.

Det fins ingen gale eller riktige svar, og alle opplysningene vil bli behandlet uten navn, fødselsnummer og andre direkte personidentifiserbare opplysninger.

På forhånd tusen takk for hjelpen!

Hilsen Silje M. Haga (prosjektleder) og Thorbjørn Steen

Start besvarelsen



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**Bakgrunnsinformasjon 1**

1. Studiedeltakernummer:

2. Når er du født?

19

3. I hvilket land er du født?

☐ Norge

☐ Annet, spesifiser:

4. I hvilket land er dine foreldre født?

☐ Norge

☐ Annet, spesifiser:

5. Hva er din høyeste, fullførte utdanning, eller hvilken utdanning er du i ferd med å fullføre?

☐ Ikke fullført grunnskolen

☐ Grunnskolen

☐ Videregående skole

☐ Høyere utdanning (Bachelor grad)

☐ Høyere utdanning (Master grad)

6. Hva er din sivilstatus?

☐ Gift

☐ Samboer

☐ Enslig

7. Bodde du sammen med barnets far før fødselen?

☐ Ja

☐ Nei

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## Bakgrunnsinformasjon 2



8. Røyker du for tiden?

☐ Nei☐ Ja - hvor mange sigaretter per dag? 

9. Hvor mange barn har du født (inkludert det siste)?

 barn

10. Hva er ditt nyfødte barns kjønn?

☐ Gutt☐ Jente

11. Hvor mange av de barna du har født er det som lever idag?

 barn

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## Følelser

Her kommer noen ord for ulike følelser. Les hvert ord og merk av det svaret som passer ved siden av ordet. Merk av i hvilken grad du har følt det slik den siste tiden.

	Svært lite, eller ikke i det hele tatt	Litt	Middels	En del	Mye
12. Interessert	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
13. Nedtrykt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
14. Opprømt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
15. Opprørt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
16. Sterk	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
17. Full av skyldfølelser	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
18. Skremt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
19. Uvennlig	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

	Svært lite, eller ikke i det hele tatt	Litt	Middels	En del	Mye
20. Entusiastisk	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
21. Stolt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
22. Irritabel	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
23. Årvåken	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
24. Skamfull	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
25. Inspirert	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
26. Nervøs	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
27. Bestemt	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

28. Oppmerksom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
29. Skjelven	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
30. Aktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
31. Redd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5

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## Hvordan håndterer/takler du hendelser?

Alle opplever negative eller ubehagelige hendelser nå og da, og alle reagerer på disse hendelsene på sin egen måte. På spørsmålene som følger ber vi deg indikere hvordan du typisk tenker når du opplever noe negativt eller ubehagelig. Vennligst les setningene nedenfor og indiker hvor ofte du har slike tanker (når du har opplevd noe negativt/ubehagelig) ved å markere det mest passende svaret.

	(nesten) aldri	noen ganger	jevnlig	ofte	(nesten) alltid
32. Jeg tenker at jeg må akseptere at dette har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
33. Jeg tenker ofte på hva jeg føler om det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
34. Jeg tenker at jeg kan lære noe av situasjonen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
35. Jeg føler at jeg er ansvarlig for det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
36. Jeg tenker at jeg må akseptere situasjonen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
37. Jeg er opptatt av hva jeg tenker og føler om det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
38. Jeg tenker på behagelige/positive ting som ikke har noe med saken å gjøre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
	(nesten) aldri	noen ganger	jevnlig	ofte	(nesten) alltid
39. Jeg tenker at jeg kan bli en sterkere person pga det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
40. Jeg tenker stadig på hvor forferdelig det er det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
41. Jeg føler at andre er ansvarlig for det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
42. Jeg tenker på noe positivt i stedet for det som har skjedd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
43. Jeg tenker på hvordan jeg kan endre situasjonen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
44. Jeg tenker at det som skjedde ikke er så ille sammenlignet med andre ting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
45. Jeg tenker at det må være jeg som er årsaken (til det som har skjedd)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
46. Jeg tenker ut en plan som jeg kan gjennomføre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
47. Jeg sier til meg selv at det fins verre ting i livet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
48. Jeg tenker hele tiden på hvor forferdelig situasjonen var	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5
49. Jeg føler at det er andre som er årsaken (til det som har skjedd)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5

**Beskriv deg selv som person 1**

Følgende spørsmål tar for seg hvordan du vil beskrive deg selv som person.

	Ikke i det hele tatt				Absolutt
50. Generelt sett, vil du beskrive deg selv som en person som takler/mestrer ting?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
51. Generelt sett, vil du beskrive deg selv som en nervøs person?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
52. Generelt sett, vil du beskrive deg selv som en tilbaketrukket person som syns selvhøvdelse er vanskelig?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
53. Generelt sett, er du en person som bekymrer deg over hva andre syns om deg?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
54. Generelt sett, vil du si at du er en person som bekymrer deg mye?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
55. Generelt sett, er du en person som liker å ha mye orden i livet ditt (f.eks. rutiner, liker at det er ryddig)	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
56. Generelt sett, er du en person som har vanskeligheter med å fullføre ting fordi så mye tid går med til å gjøre det helt perfekt?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
57. Generelt sett, vil du beskrive deg selv som en person som er veldig åpen om følelsene dine? (for eksempel klemmer folk når du treffer dem, eller gråter lett)	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
58. Generelt sett, er du en person som har mye temperament og som lett kan miste besinnelsen?	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

**Beskriv deg selv som person 2**

Vennligst indiker i hvilken grad du er enig eller uenig i de følgende påstandene

	Helt galt	Nokså galt	Nokså riktig	Helt riktig
59. Jeg klarer alltid å løse vanskelige problemer hvis jeg prøver hardt nok	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
60. Hvis noen motarbeider meg, så kan jeg finne måter og veier for å få det som jeg vil.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
61. Det er lett for meg å holde fast på planene mine og nå målene mine.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
62. Jeg føler meg trygg på at jeg ville kunne takle uventede hendelser på en effektiv måte.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
63. Takket være ressursene mine så vet jeg hvordan jeg skal takle uventede situasjoner.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
64. Jeg kan løse de fleste problemer hvis jeg går tilstrekkelig inn for det.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
65. Jeg beholder roen når jeg møter vanskeligheter fordi jeg stoler på mestringsevnen min.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

66. Når jeg møter et problem, så finner jeg vanligvis flere løsninger på det.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
67. Hvis jeg er i knipe, så finner jeg vanligvis en vei ut.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
68. Samme hva som hender så er jeg vanligvis i stand til å takle det.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

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## Følelser siste uke

Ettersom du nylig har født barn er vi interessert i å vite hvordan du føler det om dagen. Marker det svaret som passer best for hvordan du har følt det den siste uka, altså ikke bare hvordan du føler det i dag.

69. Har du de siste 7 dager kunnet le og se det komiske i en situasjon?

- ☐ Like mye som vanlig
- ☐ Ikke riktig så mye som jeg pleier
- ☐ Klart mindre enn jeg pleier
- ☐ Ikke i det hele tatt

70. Har du de siste 7 dager gledet deg til ting som skulle skje?

- ☐ Like mye som vanlig
- ☐ Noe mindre enn jeg pleier
- ☐ Klart mindre enn jeg pleier
- ☐ Nesten ikke i det hele tatt

71. Har du de siste 7 dager bebreidet deg selv uten grunn når noe gikk galt?

- ☐ Ja, nesten hele tiden
- ☐ Ja, av og til
- ☐ Ikke særlig ofte
- ☐ Nei, aldri

72. Har du de siste 7 dager vært nervøs eller bekymret uten grunn?

- ☐ Nei, slett ikke
- ☐ Nesten aldri
- ☐ Ja, iblant
- ☐ Ja, veldig ofte

73. Har du de siste 7 dager vært redd eller fått panikk uten grunn?

- ☐ Ja, svært ofte
- ☐ Ja, noen ganger
- ☐ Sjelden
- ☐ Nei, aldri

74. Har du de siste 7 dager følt at det har blitt for mye for deg?

- ☐ Ja, jeg har stort sett ikke fungert i det hele tatt
- ☐ Ja, iblant har jeg ikke klart å fungere som jeg pleier
- ☐ Nei, for det meste har jeg klart meg bra
- ☐ Nei, jeg har klart meg like bra som vanlig

75. Har du de siste 7 dager vært så ulykkelig at du har hatt vanskeligheter med å sove?

- ☐ Ja, for det meste  
☐ Ja, iblant  
☐ Ikke særlig ofte  
☐ Nei, ikke i det hele tatt

76. Har du de siste 7 dager følt deg nedfor eller ulykkelig?

- ☐ Ja, det meste av tiden  
☐ Ja, ganske ofte  
☐ Ikke særlig ofte  
☐ Nei, ikke i det hele tatt

77. Har du de siste 7 dager vært så ulykkelig at du har grått?

- ☐ Ja, nesten hele tiden  
☐ Ja, veldig ofte  
☐ Ja, det har skjedd iblant  
☐ Nei, aldri

78. Har tanken på å skade deg selv streifet deg, de siste 7 dagene?

- ☐ Ja, nokså ofte  
☐ Ja, av og til  
☐ Ja, såvidt  
☐ Aldri

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## Dine sosiale relasjoner - 1

Vennligst indiker nedenfor i hvilken grad du er enig eller uenig i påstandene.

	Ikke riktig/sant	Nesten ikke sant	Litt sant	Helt riktig/sant
79. Noen personer liker meg ordentlig godt.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
80. Når jeg ikke føler meg bra, viser andre at de bryr seg om meg.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
81. Når jeg er lei meg så er det noen som muntre meg opp.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
82. Det er alltid noen der for meg når jeg trenger trøst.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
83. Jeg kjenner noen som jeg alltid kan stole på.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
84. Når jeg er bekymret så er det noen som hjelper meg.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
85. Det fins personer som tilbyr meg hjelp/støtte når jeg trenger det.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
86. Når det blir for mye for meg så hjelper andre meg.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
87. Når jeg føler meg nede så trenger jeg noen som kan muntre meg opp.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
88. Det er viktig for meg å alltid ha noen som kan lytte til meg.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

89. Før jeg gjør en viktig beslutning trenger jeg andres mening.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
90. Jeg klarer meg best uten hjelp fra andre.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
91. I vanskelige situasjoner foretrekker jeg å spørre andre om råd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
92. Når jeg er nedfor oppsøker jeg andre for at de skal muntre meg opp igjen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
93. Når jeg er bekymret oppsøker jeg noen jeg kan snakke med.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
94. Hvis jeg ikke vet hvordan jeg skal takle en situasjon så spør jeg andre hva de ville gjort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
95. Når jeg trenger hjelp så spør jeg om det.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4

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## Dine sosiale relasjoner - 2

Tenk på den personen som står deg nærmest, det kan være samboer, partner, barn, venn, forelder osv. Hvordan har denne personen vært mot deg i løpet av den siste uken?

Denne personen...

	Ikke riktig/sant	Nesten ikke sant	Litt sant	Helt riktig/sant
96. har vist meg at han/hun er glad i meg og aksepterer meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
97. var der for meg når jeg trengte han/henne.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
98. trøstet meg når jeg følte meg dårlig/nedfor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
99. lot meg være i fred/alene.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
100. viste ikke mye empati for min situasjon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
101. klaget over min væremåte.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
102. ordnet mange ting for meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
103. fikk meg til å føle meg verdsatt og viktig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
104. uttrykte bekymring over min situasjon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
105. forsikret meg om at jeg kan stole fullt og helt på han/henne.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
106. hjalp meg til å se noe positivt i situasjonen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
107. foreslo aktiviteter som kunne distrahere meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
108. oppfordret meg til å ikke gi opp.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
109. ordnet opp i ting jeg ikke klarte å ordne på egen hånd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4
110. er jeg generelt svært fornøyd med hvordan har vært mot meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4

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## Amming

Her kommer noen påstander i forhold til amming. Vennligst indiker nedenfor i hvilken grad du er enig eller uenig.

	Sjelden	Noen ganger	Jevnlig	Ofte	Alltid
111. Jeg klarer å avgjøre om barnet mitt får nok melk.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
112. Jeg takler amming slik jeg alltid takler utfordrende oppgaver.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
113. Jeg ammer uten å bruke kunstig fremstilt morsmelk som et tillegg.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
114. Jeg føler at barnet mitt får god kontakt med brystet og suger ordentlig gjennom en amming.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
115. Jeg klarer å amme.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
116. Jeg klarer å amme selv om barnet mitt gråter.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
117. Jeg klarer å beholde lysten til å amme.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
118. Jeg er komfortabel med å amme selv om andre i familien er tilstede.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
119. Jeg er fornøyd med ammeopplevelsen.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
120. Jeg takler at ammingen kan være tidkrevende.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
121. Jeg klarer å mate barnet fra et bryst før jeg bytter til det andre.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
122. Jeg klarer å amme barnet til hvert måltid.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
123. Jeg klarer å holde tritt med barnets behov for amming.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
124. Jeg vet når barnet er forsynt/ferdig med å amme.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

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## Hvordan håndterer du følelser?

Vennligst indiker nedenfor i hvilken grad du er enig eller uenig i de følgende påstandene.

	Svært enig		Verken enig eller uenig			Svært uenig	
125. Jeg kontrollerer følelsene mine ved å endre på hvordan jeg tenker på situasjonen.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
126. Når jeg har ønske om å føle meg mer positiv endrer jeg hvordan jeg ser på situasjonen.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
127. Når jeg har positive følelser passer jeg på å ikke uttrykke dem.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
128. Jeg holder følelsene mine for meg selv.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
129. Når jeg har behov for å ha mindre negative følelser (f.eks., tristhet eller sinne) tenker jeg på noe annet.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
130. Når jeg er i en stresset situasjon tvinger jeg meg selv til å tenke på situasjonen på en måte som hjelper meg å holde meg rolig.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7
131. Jeg kontrollerer følelsene mine ved å ikke uttrykke dem.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7

132. Når jeg har negative følelser passer jeg på å ikke uttrykke dem. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7
133. Når jeg har behov for å ha mer positive følelser (f.eks. glede eller begeistring) tenker jeg på noe annet. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7
134. Når jeg har ønske om å føle meg mindre negativ endrer jeg på hvordan jeg ser på situasjonen. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

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## Litt om livet ditt

Vennligst indiker nedenfor i hvilken grad du er enig eller uenig i de følgende påstandene.

- |   | Svært usant             | Usant                   | Litt usant              | Verken sant eller usant | Litt sant               | Sant                    | Svært sant              |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 135. På de fleste måter er livet mitt nær idealet mitt.                       | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 |
| 136. Livssituasjonen min er utmerket.   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 |
| 137. Jeg er fornøyd med livet mitt.   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 |
| 138. Så langt har jeg oppnådd de verdifulle tingene jeg ønsker i livet.       | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 |
| 139. Dersom jeg kunne levd livet på nytt, ville jeg nesten ikke forandre noe. | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 |

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## Emosjonelt nære relasjoner

Dette spørsmålsskjema er dekkende for alle typer emosjonelt nære relasjoner, ikke bare romantiske. Ta deg litt tid og tenk over disse relasjonene og svar deretter på følgende spørsmål med dem i dine tanker:

140. Følgende er beskrivelser av fire generelle relasjonsstiler som ofte blir omtalt. Merk det utsagnet som du synes best beskriver deg, eller kommer nærmest til å beskrive den måten du er på.
- ☐ Stil A. Det er relativt enkelt for meg å være emosjonelt nær andre. Jeg har det godt med å være avhengig av andre, og at andre er avhengige av meg. Jeg bekymrer meg ikke om å være ensom, eller om at andre ikke aksepterer meg.
  - ☐ Stil B. Jeg har noe vansker med å være nær andre. Jeg ønsker emosjonelt nære relasjoner, men det er vanskelig å helt stole på eller være avhengig av andre. Jeg bekymrer meg iblant for at jeg skal bli såret dersom jeg tillater meg selv å komme for nær andre.
  - ☐ Stil C. Jeg ønsker å være helt emosjonelt intim med andre, men jeg føler ofte at andre ikke vil komme så nær som jeg skulle ønske. Jeg føler meg ikke godt tilpass med å være uten nære relasjoner, men jeg bekymrer meg iblant for at andre ikke setter like mye pris på meg som jeg på dem.
  - ☐ Stil D. Jeg føler meg tilpass uten emosjonelt nære relasjoner. Det er meget viktig for meg å føle uavhengighet og at jeg er selv tilstrekkelig, og jeg foretrekker å ikke bli for avhengig av andre eller la andre bli for avhengige av meg.

I dette avsnittet skal du markere for hvordan hver enkelt av de ovenforstående stilene passer med din generelle



## relasjonsstil.

	Ikke lik meg i det hele tatt			Litt lik meg			Veldig lik meg
141. Stil A.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
142. Stil B.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
143. Stil C.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
144. Stil D.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Romantiske relasjoner

De følgende utsagnene dreier seg om hvordan du føler det i romantiske relasjoner. Vi er interesserte i hvordan du generelt erfarer romantiske relasjoner, ikke bare hva som skjer i ditt nåværende forhold. Vennligst indiker i hvilken grad du er enig eller uenig i de følgende påstandene

	Helt uenig			Nøytral/ blandet			Helt enig
145. Jeg foretrekker å ikke vise min kjæreste hvordan jeg har det innerst inne.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
146. Jeg bekymrer meg for å bli forlatt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
147. Jeg føler meg veldig bekvem med å være nær en kjæreste.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
148. Jeg bekymrer meg en del om mine relasjoner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
149. Når min kjæreste begynner å komme nær meg, trekker jeg meg unna.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
150. Jeg bekymrer meg for at mine kjæresten ikke skal bry seg om meg like mye som jeg bryr meg om dem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
151. Jeg føler meg utilpass når en kjæreste ønsker å komme veldig nær meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
152. Jeg bekymrer meg i rimelig grad for å miste min kjæreste.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
153. Jeg føler meg ikke tilpass med å åpne meg for kjæresten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
154. Jeg ønsker ofte at kjærestens følelser for meg, var like sterke som mine er for henne/ham.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
155. Jeg ønsker å komme nær min kjæreste, men trekker meg stadig vekk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
156. Jeg ønsker ofte å sammensmelte fullstendig med mine kjæresten, og det skremmer dem ofte vekk fra meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
157. Jeg blir urolig når kjæresten kommer for nær meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
158. Jeg bekymrer meg for å være alene.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
159. Jeg føler meg godt tilpass når jeg deler mine private tanker og følelser med min kjæreste.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
160. Mitt ønske om å være veldig nær, skremmer ofte bort mennesker fra meg.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- |  |                       |                       |                       |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 161. Jeg prøver å unngå å komme for nær kjæresten min.                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
|  | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     |
| 162. Jeg trenger mye bekræftelse fra kjæresten min om at han/hun elsker meg. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
|  | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     |

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## Om kropp og utseende

Indiker i hvilken grad de følgende påstandene stemmer/ikke stemmer.

- |  | Stemmer helt          | Stemmer godt          | Stemmer ganske godt   | Stemmer noenlunde     | Stemmer ikke særlig godt | Stemmer ikke i det hele tatt |
|--|-----------------------|-----------------------|-----------------------|-----------------------|--------------------------|------------------------------|
| 163. Jeg er stort sett fornøyd med kroppen min.                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        |
|  | 1                     | 2                     | 3                     | 4                     | 5                        | 6                            |
| 164. Det er en god del ved kroppen min som jeg ønsker var annerledes.    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        |
|  | 1                     | 2                     | 3                     | 4                     | 5                        | 6                            |
| 165. Det er en god del ved utseendet mitt som jeg ønsker var annerledes. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        |
|  | 1                     | 2                     | 3                     | 4                     | 5                        | 6                            |
| 166. Jeg er stort sett fornøyd med utseendet mitt.                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        |
|  | 1                     | 2                     | 3                     | 4                     | 5                        | 6                            |

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### Debriefing:

Tusen takk for hjelpen!

Vi vil kontakte deg igjen ca 3 og 6 mnd etter fødselen med nytt spørreskjema.

Har du spørsmål om studien, ta gjerne kontakt med:

Silje M. Haga (doktorgradsstipendiat, prosjektleder, Universitetet i Oslo) Telefon: 22 84 51 78 e-post: [s.m.haga@psykologi.uio.no](mailto:s.m.haga@psykologi.uio.no)

eller

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### Email Invitation:

134

### Email Reminder:

135

## **APPENDIX II**

### Interview guide



Interview guide
-----------------

1. Introduce myself
2. Could you please start by telling me a little bit about yourself? Such as your age, when your baby was born, your education, do you live with the father of your baby?
3. Can you remember how you felt/what you were thinking shortly after you realized that you were pregnant?
4. How was the pregnancy?
5. How did you experience the birth?
6. How was it coming home from the hospital? Could you describe the first couple of days?
7. How is a typical day and week these days? Why don't you start by describing a typical day? What do you (and the baby) typically do? How do feel about it? Tell me a little bit about:
  - a. Sleep
  - b. Breastfeeding
  - c. Your partner
8. So what does a typical week look like? Do you and the baby have any regular things that you do? For instance:
  - a. Weekly meetings with the postpartum group?
  - b. Do you have friends in the same situation? What are their days like?
  - c. Do you go to cafés?
  - d. How do you feel after different "excursions"? Excited? Tired?
  - e. Does your mother in law, or mother visit often?
  - f. What, if anything, could improve your week? Do you miss anything? Anything you used to do before you became a mother?
  - g. What is the best part of the week?
  - h. Is there anything you feel you should do? Activities?
  - i. What makes you happy? How can you tell when you're happy?
9. While you were pregnant, how did you picture the postpartum period? How did you want the postpartum period to be? What did you think it would be like to have a baby? Could you give me some examples?

10. Now I would like to talk a little bit more about your partner. How do you think he feels about being a father?
11. Having a baby can be both wonderful, but also challenging and tough. It can be emotionally difficult. Is this something you can relate to?
  - a. Follow-up questions if the woman says she has felt down/depressed:
    - i. Please describe how you feel when you are feeling down
    - ii. What's your day like then?
    - iii. Do you know why you feel like that sometimes? Do certain situations trigger the emotions/thoughts?
    - iv. How do you show the people around you that you are feeling sad/down?
    - v. What do you do in those situations? How do you feel that those around you react when you are sad? How to they accommodate you?
    - vi. What makes you feel less down/depressed? Friends? Partner? Family?  
The well-baby clinic?
12. The term yammy-mammy has emerged over the last few years. Are you familiar with the term?
  - a. If so, how do you (and your friends) feel about the phenomenon?
  - b. Has your relationship to your body changed since you had a baby? If so, in what way?
  - c. Has it affected your relationship with your partner?
  - d. Have you started being intimate again? Are you waiting a bit? How do the two of you feel about that?
13. What do feel you manage well as a mother so far? (*acknowledge if the woman has been a mother for a very short time*). What are you most proud of?
14. What do you feel you manage less well?
  - a. Does it worry you?
  - b. Do you talk to anyone about it? Your partner? Your friends? Do you friends experience similar things?
15. What purpose does the well-baby clinic serve to you? When do you contact them?
  - a. Do you feel that the well-baby clinic represents somewhat of a free-zone to you?
  - b. What role does your doctor play? When do you contact him/her?

- c. What kind of things do you feel comfortable asking about?
16. Is there anything else you would like to talk about before we wrap this up? Thank you so much for your time.

